

A 45-year-old man presents to the General Practitioner with a three-month history of generalised oedema and frothy urine. He has a history of hypertension and a recent diagnosis of poorly controlled type II diabetes mellitus. His BMI is 35 kg/m<sup>2</sup>. Urinalysis reveals heavy proteinuria.

**What is the most likely diagnosis?**

Your answer was incorrect

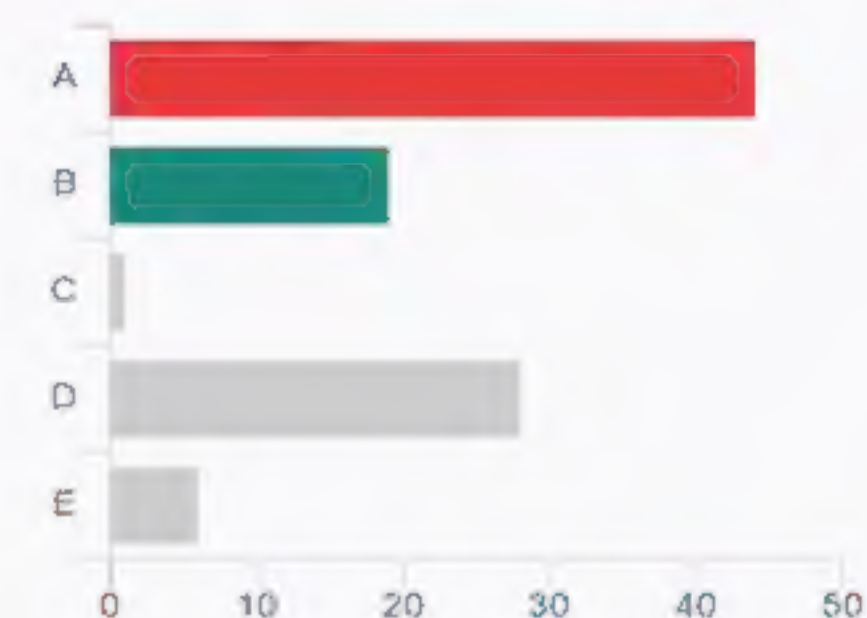
- |   |  |
|---|--|
| A | Diabetic nephropathy                   |
| B | Focal and segmental glomerulosclerosis |
| C | Immunoglobulin A nephropathy           |
| D | Membranous nephropathy                 |
| E | Minimal change disease                 |

### Explanation

- |   |  |
|---|--|
| B | Focal and segmental glomerulosclerosis |
|---|--|

Focal and segmental glomerulosclerosis (FSGS) is most likely in this patient, given his presentation with heavy proteinuria. FSGS is a common cause of nephrotic syndrome in adults and is often associated with obesity (especially morbid obesity) and systemic diseases such as hypertension and diabetes, which are both present in this patient. The diagnosis is supported by the clinical picture of generalised oedema, frothy urine, and the

Peer Responses %



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Chat with AI Tutor



Pastest

Question 2 of 100

A 63-year-old woman presents to the Emergency Department with worsening shortness of breath while taking bronchodilators over the past few months. She is a non-smoker, and her pulmonary function tests reveal a forced expiratory volume in one second (FEV<sub>1</sub>) of 1.29-1.35 litres and a forced vital capacity (FVC) of 2.95-3.45 litres.

Which of the following is the most likely cause of her symptoms?

Your answer was correct

- A

Asthma
- B

Bronchial stenosis
- C

Chronic obstructive pulmonary disease
- D

Interstitial lung disease
- E

Pulmonary embolism

Explanation

B Bronchial stenosis

Bronchial stenosis, a narrowing of the airways, can cause fixed airway obstruction. This is reflected in the patient's pulmonary function tests, which show a consistently low FEV<sub>1</sub> with a relatively preserved FVC. This reduces the FEV<sub>1</sub>/FVC ratio, indicative of obstructive lung disease that does not significantly improve with

Difficulty: Average



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Chat with AI Tutor



**What is the most likely diagnosis?**

A Dermatomyositis

B Mixed connective tissue disease

C Rheumatoid arthritis

D Systemic lupus erythematosus

E Systemic sclerosis

### Explanation

## E Systemic sclerosis

Peer Responses %

Category	Peer Responses %
A	3
B	5
C	1
D	1
E	88

Q.	Answered	Flagged
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Chat with AI Tutor

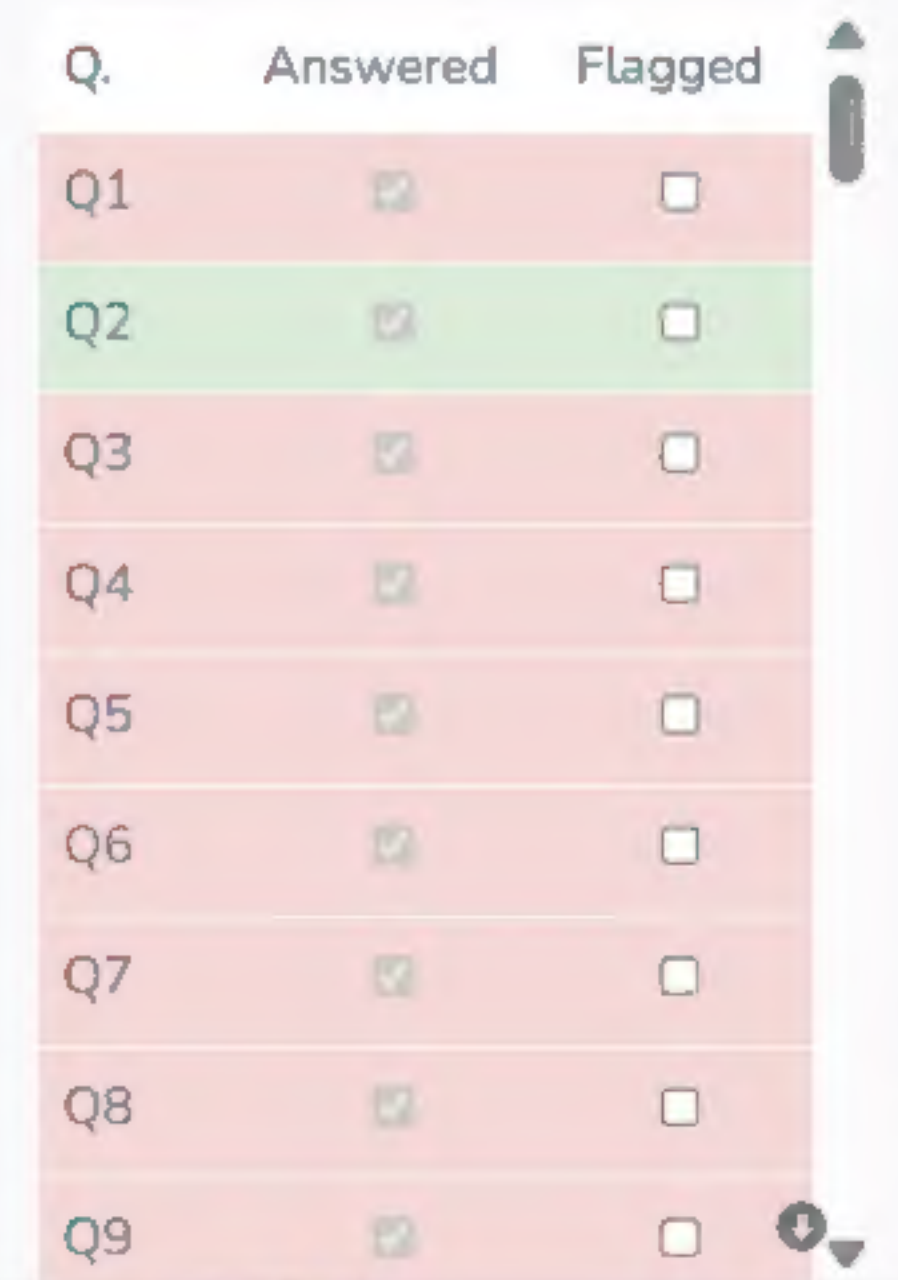


**What is the most likely diagnosis?**

A	Delirium
B	Depression with psychotic features
C	Paranoid schizophrenia
D	Persistent delusional disorder
E	Substance-induced psychosis



Depression with psychotic features or psychotic depression can present with mood-congruent delusions or hallucinations, such as feelings of worthlessness or guilt, or in this case, somatic delusions of insects crawling on the skin. The presence of suicidal thoughts further supports the diagnosis of a severe depressive episode. Her age and lack of substance use history also make this diagnosis more likely than other psychiatric





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A 34-year-old woman presents to the Emergency Department with a headache, fever, neck stiffness and photophobia. Her past medical history is significant for a documented penicillin allergy causing anaphylaxis. CSF analysis indicates bacterial meningitis.

What is the most appropriate antibiotic treatment for this patient?

Your answer was incorrect

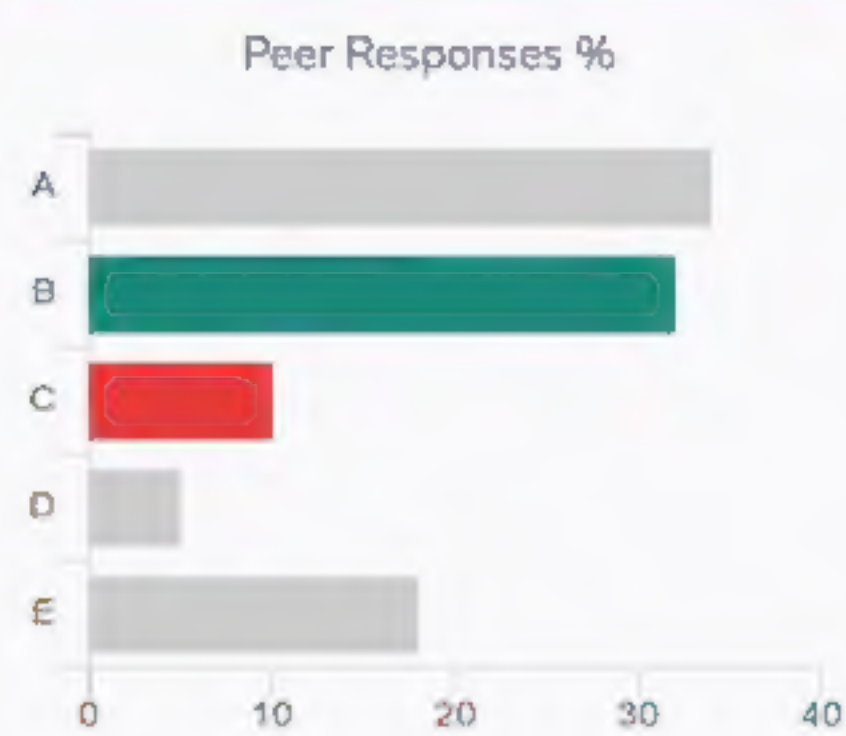
- A Ceftriaxone
- B Chloramphenicol
- C Clindamycin
- D Doxycycline
- E Vancomycin

Explanation

B Chloramphenicol

Chloramphenicol is the most appropriate antibiotic treatment for a patient with bacterial meningitis and a documented anaphylactic reaction to penicillin. It is a broad-spectrum antibiotic effective against many types of bacteria causing meningitis. It can penetrate the central nervous system well, achieving therapeutic concentrations in the CSF. Given the severity of this patient's penicillin allergy, alternative agents like

Difficulty: Average



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Pastest

Question 6 of 100

A 57-year-old woman presents to the General Practitioner with progressive dysphagia and a history of recurrent aspiration pneumonia. She has been diagnosed with motor neurone disease (MND) and her condition is deteriorating, making oral feeding increasingly difficult.

What is the most appropriate method of providing nutritional support for this patient?

Your answer was incorrect

A

Ileostomy

B

NG tube

C

Nasoduodenal tube

D

Percutaneous endoscopic gastrostomy

E

Total parenteral nutrition

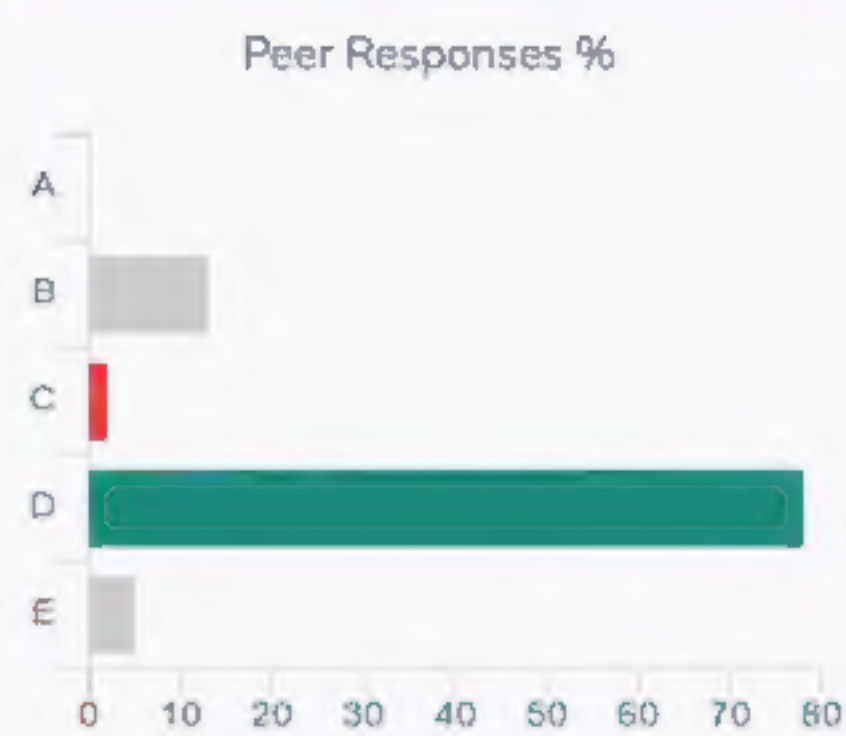
Explanation

D

Percutaneous endoscopic gastrostomy

Percutaneous endoscopic gastrostomy (PEG) is the most appropriate method for providing long-term nutritional support to a patient with MND who has difficulty swallowing and is at risk of aspiration. PEG tubes allow direct access to the stomach for feeding, reducing the risk of aspiration compared to oral or nasogastric feeding. They are more comfortable and practical for long-term use and can improve the patient's quality of life.

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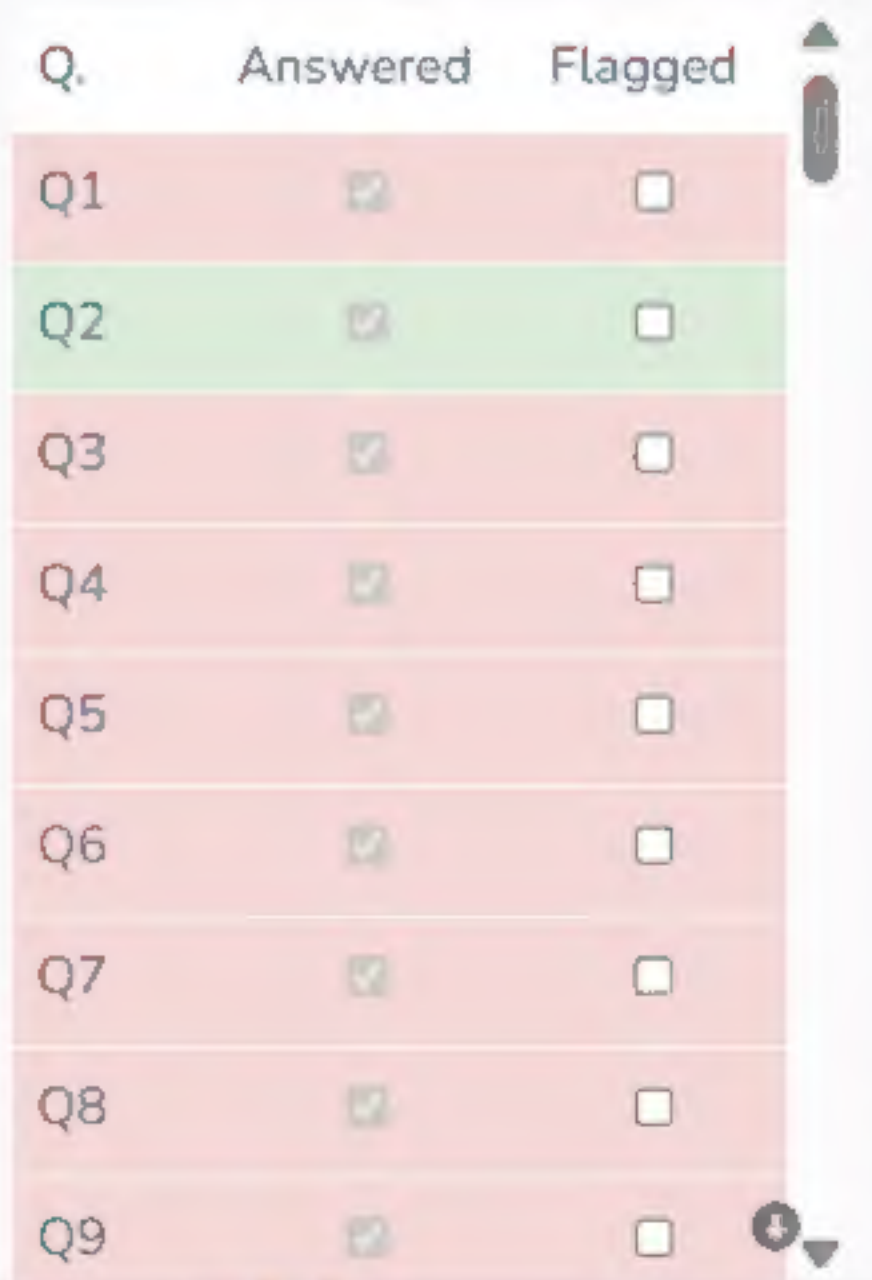


What is the most appropriate initial management for her bladder urge incontinence?

A	Intravesical botulinum toxin
B	Oral tolterodine
C	Pelvic floor exercises
D	Indwelling catheter
E	Intermittent catheterisation



This is the most appropriate initial management for bladder urge incontinence in a patient with MND. Tolterodine is an antimuscarinic agent that reduces bladder muscle contractions, thereby decreasing urinary frequency and urgency. It differs from other anticholinergic types in that it has selectivity for the urinary bladder over salivary glands. It is generally well tolerated and can be taken orally, which is a significant advantage for



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Pastest

Question 8 of 100

A 63-year-old man presents to his General Practitioner with fatigue, anorexia and weight loss. Blood tests reveal microcytic anaemia, and further investigation shows a mass in the stomach.

In which phase of the cell cycle does DNA replication occur?

Your answer was incorrect

A	G0 phase
B	G1 phase
C	G2 phase
D	M phase
E	S phase

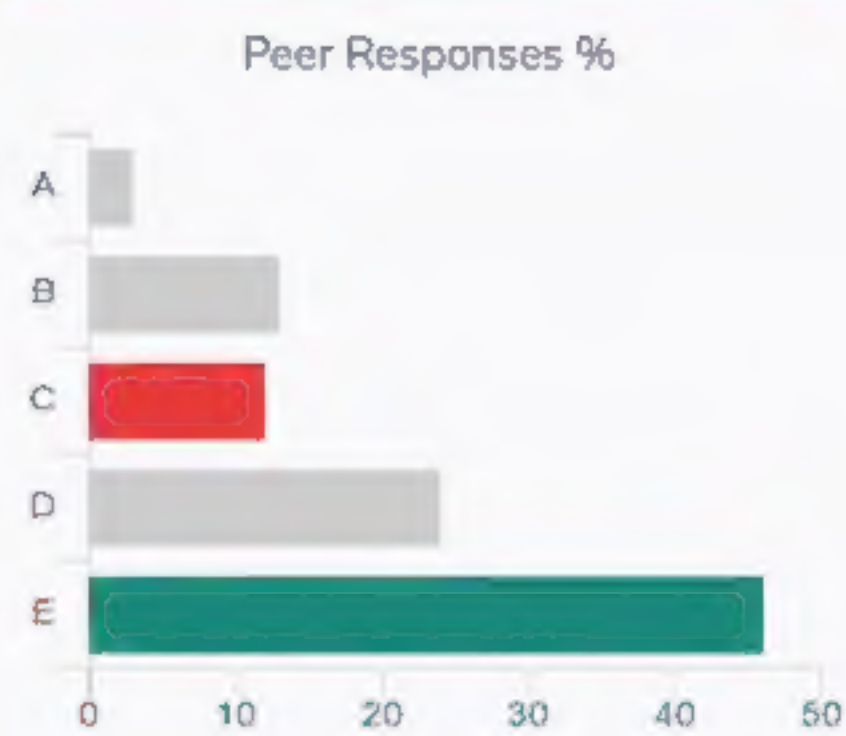
Explanation

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S phase

The S phase, or synthesis phase, is the part of the cell cycle during which DNA replication occurs. During this phase, each chromosome is duplicated to produce two sister chromatids, ensuring that each daughter cell will have an identical set of genetic material following cell division. The process of DNA replication is tightly regulated and critical for maintaining genetic stability. This is the only phase of the cell cycle during which DNA synthesis and replication take place.

Difficulty: Average



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Chat with AI Tutor



Peer Responses %

Letter	Number of People
A	5
B	2
C	0
D	28
E	65

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- Chat with AI Tutor

E	Squamous cell carcinoma
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A 41-year-old man presents to the Emergency Department with a two-week history of swelling in his legs and frothy urine. He has multiple sexual partners but no significant past medical history and denies any new medications. Laboratory investigations reveal heavy proteinuria, hypoalbuminaemia, and hyperlipidaemia.

What is the most likely underlying cause of his condition?

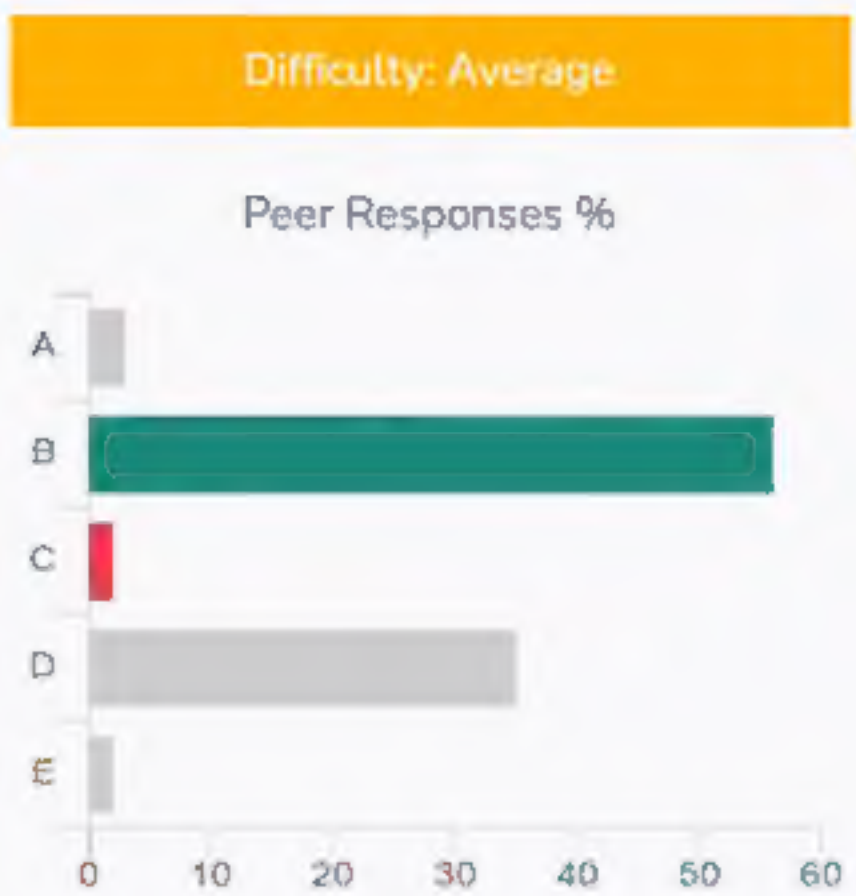
Your answer was incorrect

A	Diabetes mellitus
B	Hepatitis B infection
C	Hypertension
D	Minimal change disease
E	Systemic lupus erythematosus

Explanation

B Hepatitis B infection

Membranous glomerulonephritis (MGN) is commonly associated with chronic infections such as Hepatitis B in the setting of multiple sexual partners. This condition often presents with nephrotic syndrome, which includes heavy proteinuria, hypoalbuminaemia, and hyperlipidaemia, consistent with the patient's presentation. Hepatitis B can lead to immune complex deposition in the glomeruli, causing the characteristic changes seen in MGN.



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A 65-year-old woman presents to the Emergency Department with new-onset fatigue and night sweats. On examination, she has enlarged, non-tender lymph nodes in her neck and axillae. A biopsy reveals diffuse large B-cell lymphoma, and she is started on a chemotherapy regimen plus rituximab therapy.

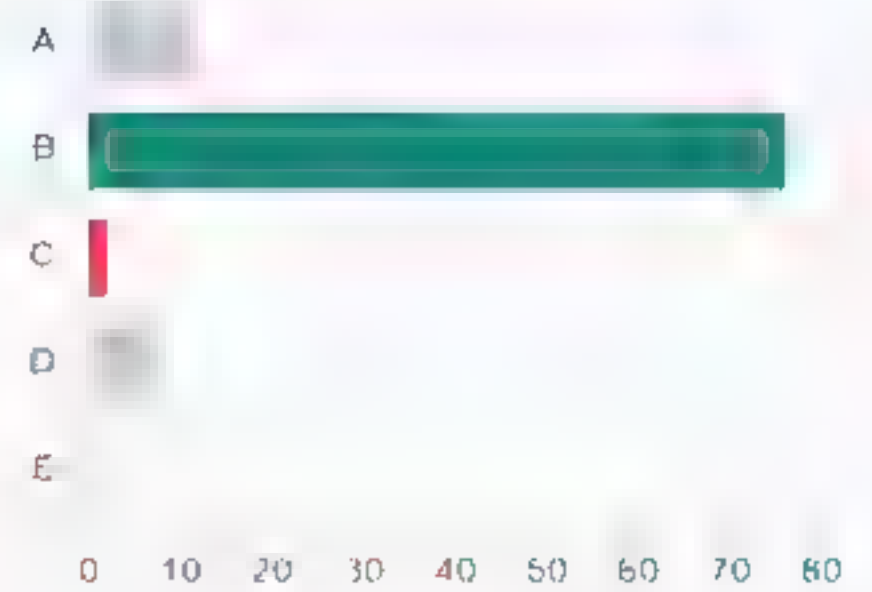
What is the mechanism of action of Rituximab?

- ☐ A BCR-ABL tyrosine kinase inhibition
- ☒ B CD20 antibody
- ☐ C VEGF receptor inhibition
- ☐ D Interleukin-2 receptor blockade
- ☐ E Vascular endothelial growth factor inhibition

Explanation

Rituximab, a chimeric monoclonal antibody, works by binding to the CD20, a surface transmembrane protein marker, which is found on the surface of B lymphocytes. This binding leads to cell lysis through mechanisms such as antibody-dependent cellular cytotoxicity and complement-dependent cytotoxicity. Rituximab is therefore effective in treating B-cell lymphomas and other diseases involving B cells. This targeted action

Peer Responses %



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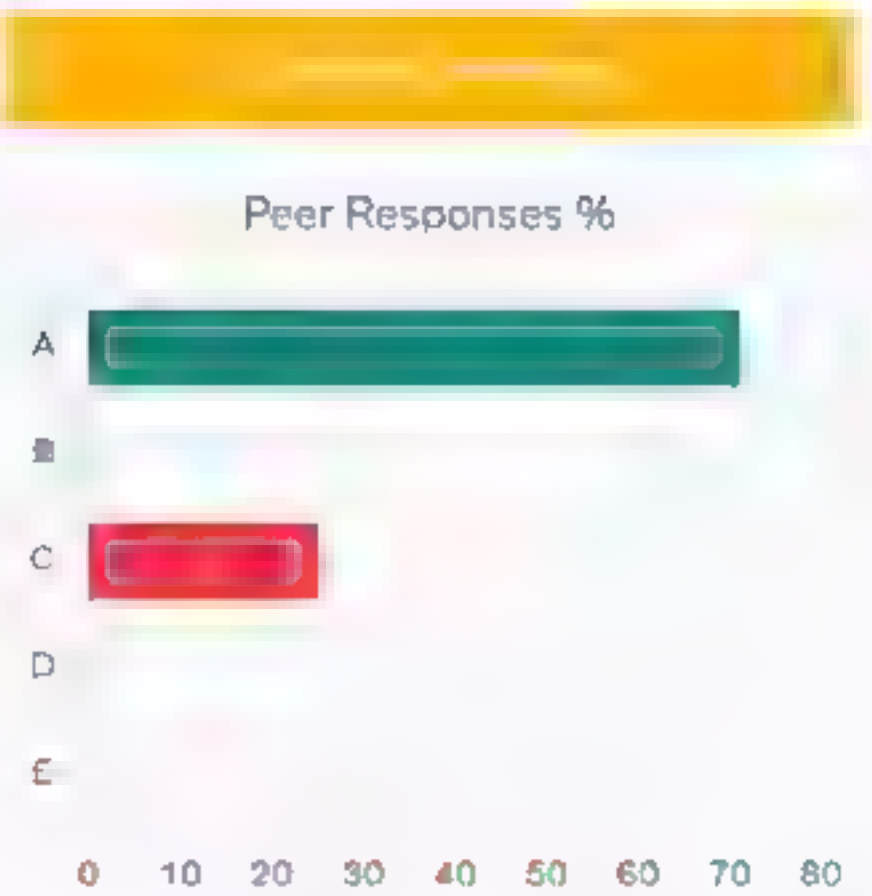
A 65-year-old man presents to his General Practitioner with a six-month history of progressive shortness of breath on exertion and a dry cough. He has a history of working in the construction industry for over 30 years and retired 10 years ago. On examination, there is digital clubbing and bibasilar end-inspiratory crackles.

Which of the following is the most likely diagnosis?

- ☐ A Asbestosis
- ☒ B Chronic obstructive pulmonary disease
- ☐ C Emphysema
- ☐ D Lung cancer
- ☐ E Tuberculosis

Explanation

Asbestosis is a pneumoconiosis caused by inhaling asbestos fibres. It typically affects individuals with a history of occupational exposure, such as construction workers. The disease is characterised by progressive dyspnoea on exertion, a dry cough, and physical examination findings like digital clubbing and bibasilar end-inspiratory crackles. The latency period between exposure and symptom onset can be several decades, consistent with



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Chat with AI Tutor



0 20 35/03 00 00

A 34-year-old woman presents to her General Practitioner with a recurring rash on her left cheek. The rash is erythematous, scaly and sometimes itchy. She reports that it gets worse with sun exposure and improves when she stays indoors.

What is the most likely cause of her symptoms?

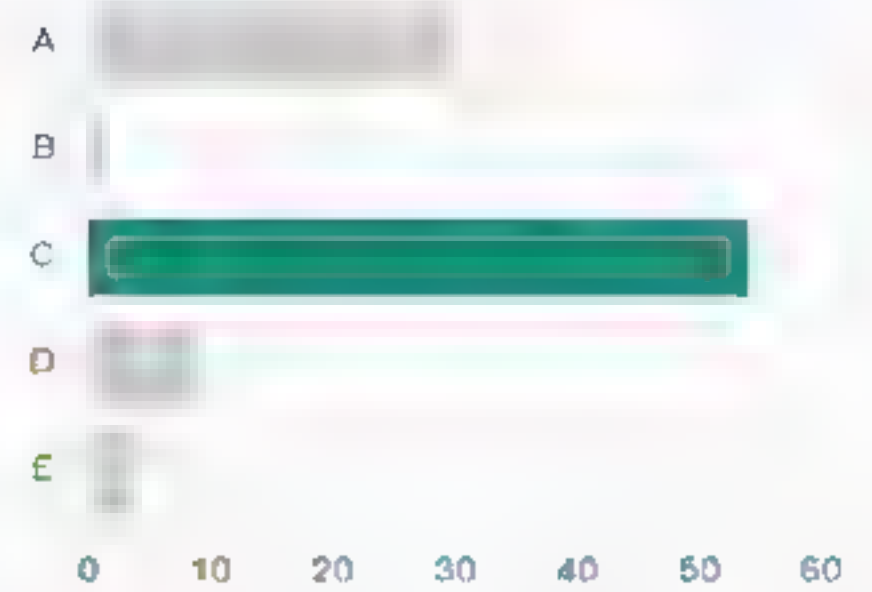
Your ans.

- A Acne rosacea
- B Contact dermatitis
- C Discoid lupus erythematosus
- D Seborrhoeic dermatitis
- E Tinea faciei

Explanation

Discoid lupus erythematosus (DLE) is a chronic dermatological condition characterised by well-defined, scaly plaques that can occur on sun-exposed areas such as the face. It often presents with photosensitivity, meaning it worsens upon exposure to sunlight, which aligns with the patient's report of exacerbation following sun exposure and improvement indoors. DLE lesions are typically chronic and may scar if untreated, which explains

Peer Responses %



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0 20 35/03 00 00

A 32-year-old woman presents to the General Practitioner with a one-week history of a swollen, tender lymph node in her right axilla and a low-grade fever. She reports being scratched by her new kitten three weeks ago. On examination, there is a 2 cm non-fluctuant lymph node with erythematous overlying skin.

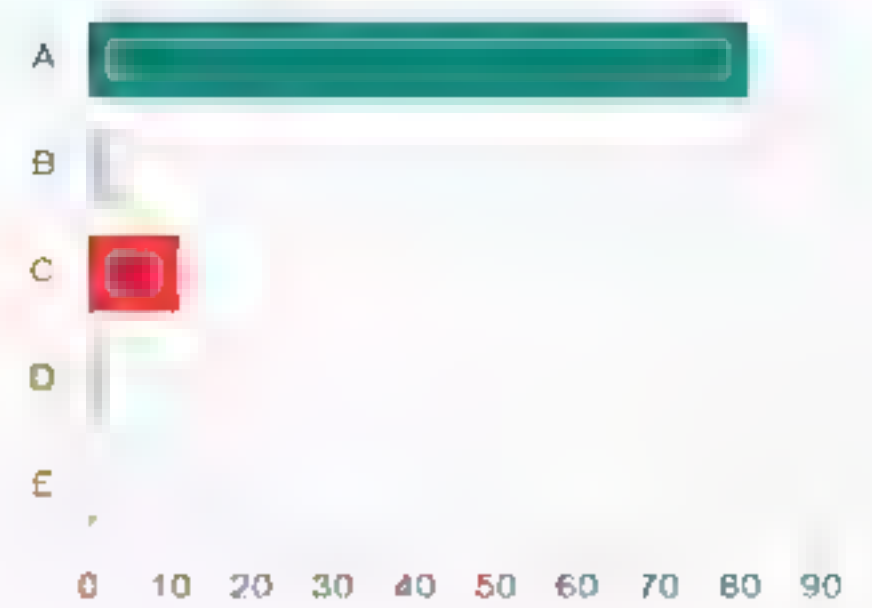
What is the most likely causative microorganism?

- ☐ *Bartonella henselae*
- ☐ *Francisella tularensis*
- ☐ *Staphylococcus aureus*
- ☐ *Streptococcus pyogenes*

Explanation

*Bartonella henselae* is the causative agent of cat scratch disease, which is typically transmitted through scratches or bites from kittens or cats. The condition often presents with a nontender papule at the inoculation site, which then recedes as localised lymphadenopathy near the scratch site. Systemic symptoms may include low grade fever, malaise and fatigue. Diagnosis is often clinical, supported by a history of cat exposure and

Peer Responses %



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0 20 35/03 00 00

A 35-year-old woman presents to her General Practitioner with a three-week history of neck pain, fatigue and fever. On examination, she has a tender, diffusely enlarged thyroid gland and her thyroid function tests show suppressed thyroid stimulating hormone (TSH) with elevated free T4 levels.

Which of the following is the best management for this patient?

Your answer was correct

- A Carbimazole
- B Levothyroxine
- C NSAIDs
- D Propranolol
- E Radioactive iodine

Explanation

NSAIDs

NSAIDs are the first-line agents used for pain management in subacute thyroiditis, a self-limiting condition often triggered by a viral infection. Patients commonly present with neck pain, fever and symptoms of hyperthyroidism due to the release of produced thyroid hormones into circulation as the gland becomes inflamed. NSAIDs are effective in managing both pain and inflammation without affecting thyroid hormone

Peer Responses %



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Chat with AI Tutor



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A 40-year-old man presents to the General Practitioner with involuntary jerky movements and a family history of similar symptoms. Genetic testing reveals a genetic abnormality on chromosome 4.

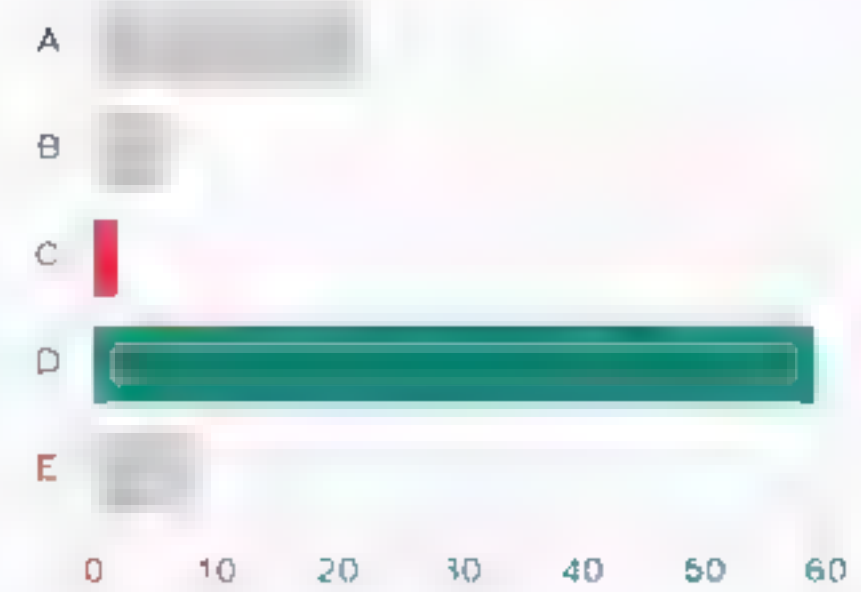
What is the genetic mechanism underlying this condition?

- ☐ Anticipation
- ☐ Genetic imprinting
- ☒ Trinucleotide repeat expansion
- ☐ X-linked inheritance

Explanation

Trinucleotide repeat expansion is the most appropriate genetic mechanism underlying Huntington's disease. Huntington's disease is caused by an expanded CAG trinucleotide repeat in the HTT gene on chromosome 4. This expansion leads to the production of an abnormal huntingtin protein, which causes neuronal death primarily in the basal ganglia. The number of repeats can increase in successive generations, correlating with an earlier onset and more severe disease, a phenomenon known as anticipation.

Peer Responses %



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Chat with AI Tutor



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Which of the following is the most likely diagnosis?

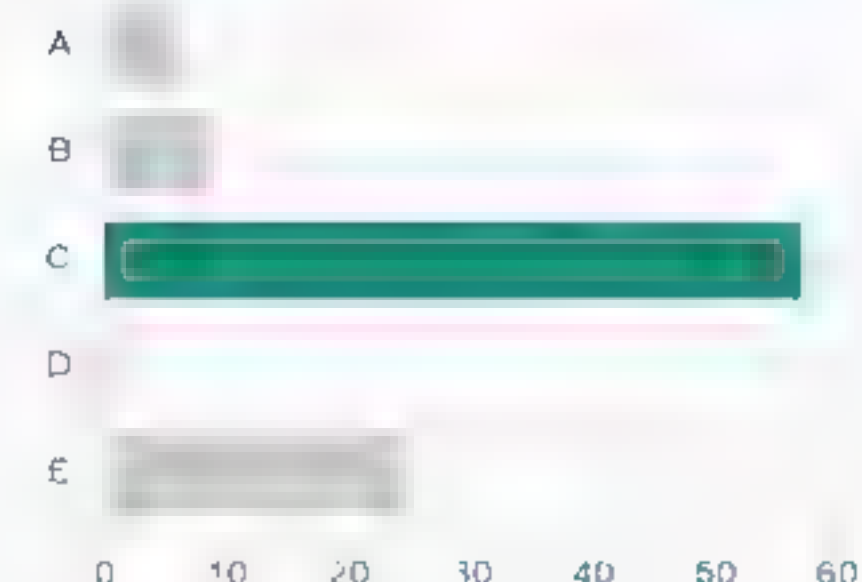
E Whipple's disease

### Explanation

## Intestinal tuberculosis

Intestinal tuberculosis (TB) should be considered in patients from regions where TB is endemic such as Oman. The chronicity of symptoms, including diarrhoea, significant weight loss, night sweats, and abdominal pain, aligns with intestinal TB presentation. Moreover, this condition can mimic other GI diseases but is supported by

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 64-year-old woman presents to the Emergency Department with a three-day history of watery diarrhoea, abdominal pain, and fever. She was recently discharged from the hospital after undergoing conservative management for an unrelated condition. Stool cultures and tests for common pathogens, including Norovirus, are negative.

What is the most likely diagnosis?

Medication-induced diarrhoea

A Crohn's disease

B Irritable bowel syndrome

C Lactose intolerance

D Small intestinal bacterial overgrowth

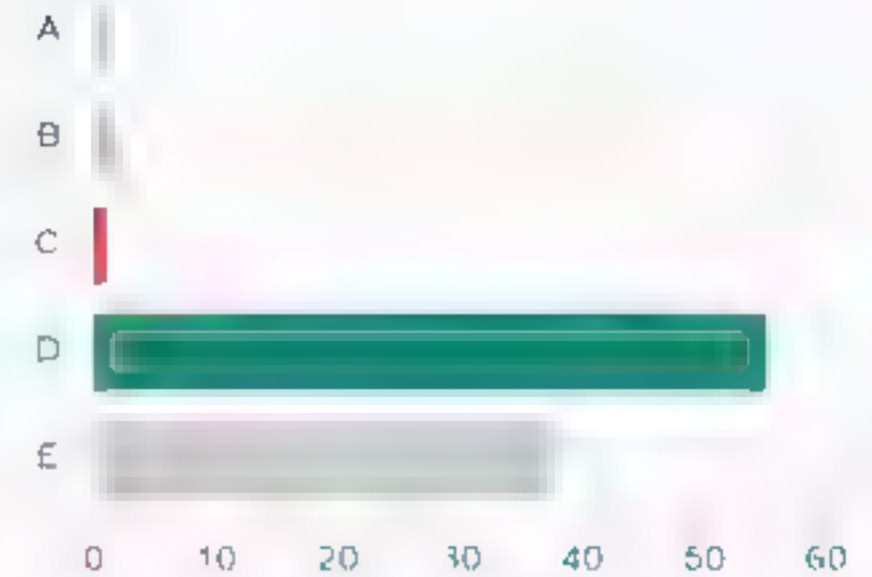
E Small intestinal bacterial overgrowth

Explanation

Medication-induced diarrhoea

Given the patient's recent hospitalisation and the timing of symptom onset, medication-induced diarrhoea is the most likely diagnosis. Certain medications, such as antibiotics or proton pump inhibitors, can disrupt the normal gut flora and cause diarrhoea. The absence of common pathogens like Norovirus further supports this.

Peer Responses %



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A 48-year-old man presents to the Emergency Department with sudden onset of severe lower back pain radiating to the lateral aspect of his leg and dorsum of his foot, accompanied by weakness in foot dorsiflexion and numbness. On examination, there is decreased strength in the extensor hallucis longus and diminished sensation over the first web space.

Which nerve root is most likely affected?

☐ A L2

A L2

B L3

☒ C L4

☐ D L5

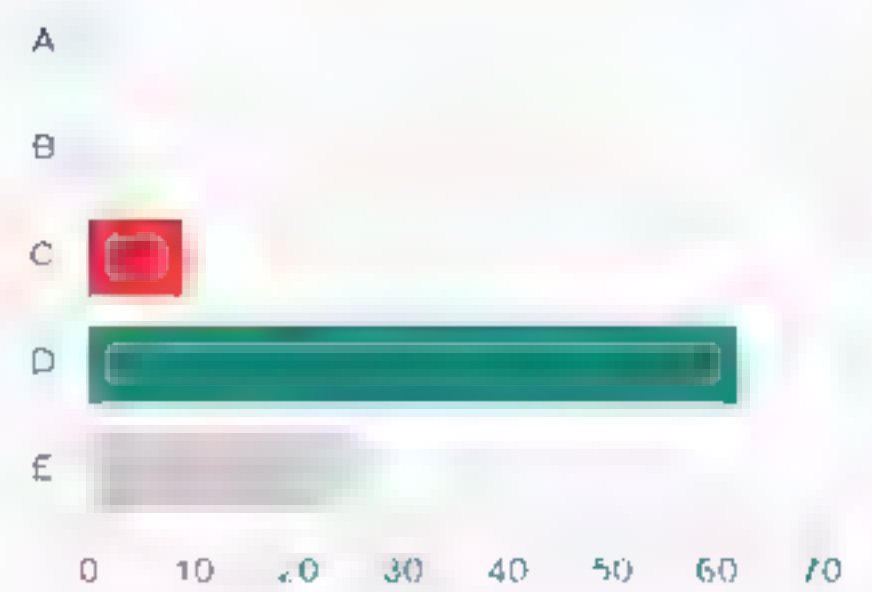
E S1

Explanation

☒ E L5

The L5 nerve root is most likely affected, given the clinical presentation. The L5 nerve root innervates the muscles responsible for foot dorsiflexion and the extensor hallucis longus, which is commonly tested by asking the patient to extend their big toe. Numbness over the first web space is a classic sign of L5 radiculopathy.

Peer Responses %



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Chat with AI Tutor



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A 67-year-old man is referred to the Cardiology Clinic with worsening shortness of breath and fatigue over the past three months. On examination, a large V wave is observed in his jugular venous pressure (JVP) and a holosystolic murmur is heard best at the lower left sternal border.

What is the most likely underlying cause of his symptoms?

☐ Aortic stenosis

A Aortic stenosis

B Hypertrophic cardiomyopathy

☐ C Tricuspid regurgitation

D Pulmonary embolism

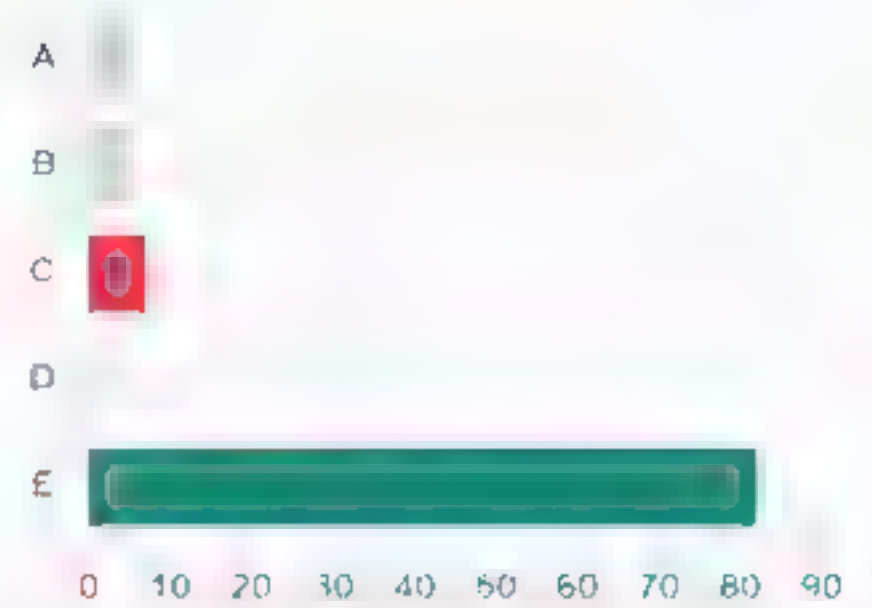
☒ E Tricuspid regurgitation

Explanation

☒ E Tricuspid regurgitation

Tricuspid regurgitation directly involves incompetence of the tricuspid valve allowing backflow of blood into the right atrium during systole. This results in a characteristic murmur and large V wave visible upon examining the jugular venous pulse due to the increased volume being pushed backwards into the systemic venous system with each ventricular contraction. This backward flow leads to systemic congestion and symptoms.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 65-year-old man is brought to the Emergency Department with a history of congestive heart failure and recent worsening dyspnoea. He has been taking furosemide for the past two weeks. On examination he is alert but shows signs of volume depletion. Blood tests reveal hypokalaemia and metabolic alkalosis

What is the most likely cause of this patient's metabolic alkalosis?

Your ans.

- A Acute kidney injury
- B Conn's syndrome
- D Inadequate ventilation
- E Vomiting

Explanation

C Diuretic therapy

Furosemide is a loop diuretic that increases renal excretion of sodium, chloride, potassium, and water while decreasing extracellular fluid volume. This leads to a contraction alkalosis as bicarbonate concentration rises in relation to reduced circulating volume. Additionally hypokalaemia from excessive potassium loss further contributes by driving hydrogen ions into cells in exchange for potassium coming out into plasma



Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 41-year-old woman presents to her General Practitioner with fatigue, mouth sores, and hair loss. She has a history of rheumatoid arthritis, for which she has been taking a new medication for the past six months. Blood tests reveal pancytopenia.

What is the mechanism of action of the most likely drug causing these symptoms?

Your ans.

A Cyclooxygenase inhibition

B Calcineurin inhibition

D DNA intercalation

E TNF-alpha inhibition

Explanation

Methotrexate inhibits dihydrofolate reductase, an enzyme crucial for the synthesis of tetrahydrofolate. This is necessary for purine and thymidylate synthesis in rapidly dividing cells such as those in bone marrow, mucosal linings, and hair follicles. This mechanism explains its effectiveness in treating conditions like rheumatoid arthritis by reducing immune cell proliferation. However, it also accounts for side effects like pancytopenia,

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 25-year-old woman presents to the Emergency Department with acute onset of chills, fever, back pain, and dark urine shortly after receiving a blood transfusion. On examination, she is tachycardic and hypotensive with a temperature of 38.5 °C. Laboratory tests reveal haemoglobinuria.

What is the most likely cause of her symptoms?

- ☐ A Transfusion-associated circulatory overload
- ☒ B Anaphylactic transfusion reaction
- ☐ C Transfusion-related acute lung injury
- ☐ D Transfusion-associated circulatory overload
- ☐ E Transfusion-related acute lung injury

Explanation

This is the most likely cause of the patient's symptoms, given the timing of her presentation following a blood transfusion. Acute haemolytic transfusion reactions are often due to ABO incompatibility and can present with fever, chills, back pain, haemoglobinuria, and haemolysis. These reactions can lead to severe complications such as disseminated intravascular coagulation, renal failure, and shock. The patient's tachycardia,



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Chat with AI Tutor



0 20 35/03 00 00

A 35-year-old woman presents to her General Practitioner to discuss the possibility of donating a kidney to her brother, who has end-stage renal disease and is on the transplant waiting list

What is the probability that she is a complete human leukocyte antigen (HLA) match with her brother?

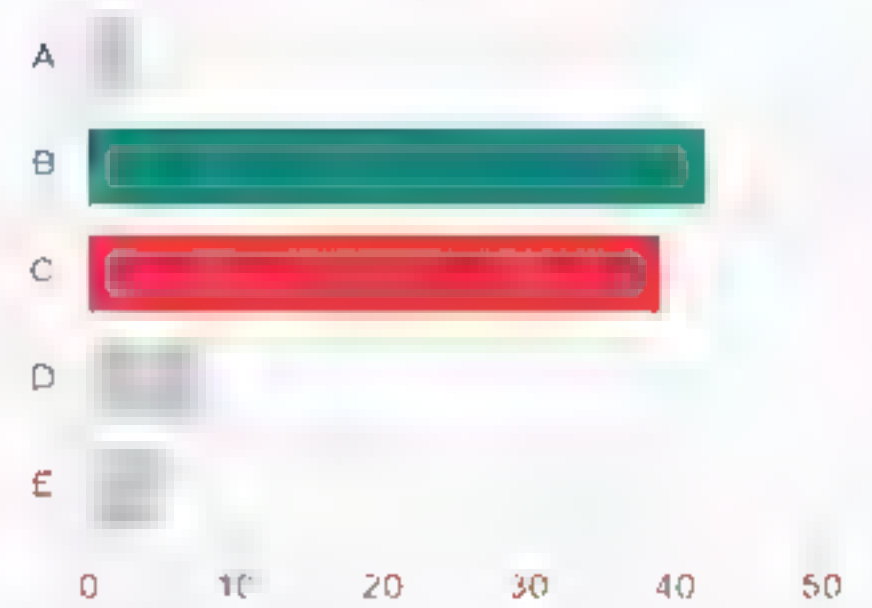
- ☐ A 0%
- ☒ B 25%
- ☐ C 50%
- ☐ D 75%
- ☐ E 100%

Explanation

☒ B 25%

Siblings have a 25% chance of being a complete HLA match. Each parent has two sets of HLA genes and passes one set to each child. Since there are four possible combinations of these genes that children can inherit, there is a 1 in 4 (25%) chance that two siblings will inherit the same combination and be a full match.

Peer Responses %



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Create with AI Tutor



0 20 35/03 00 00

A 44-year-old woman presents to the Emergency Department with episodes of palpitations and dizziness. Her ECG shows a prolonged QT interval

Which of the following medications is most likely to have caused this finding?

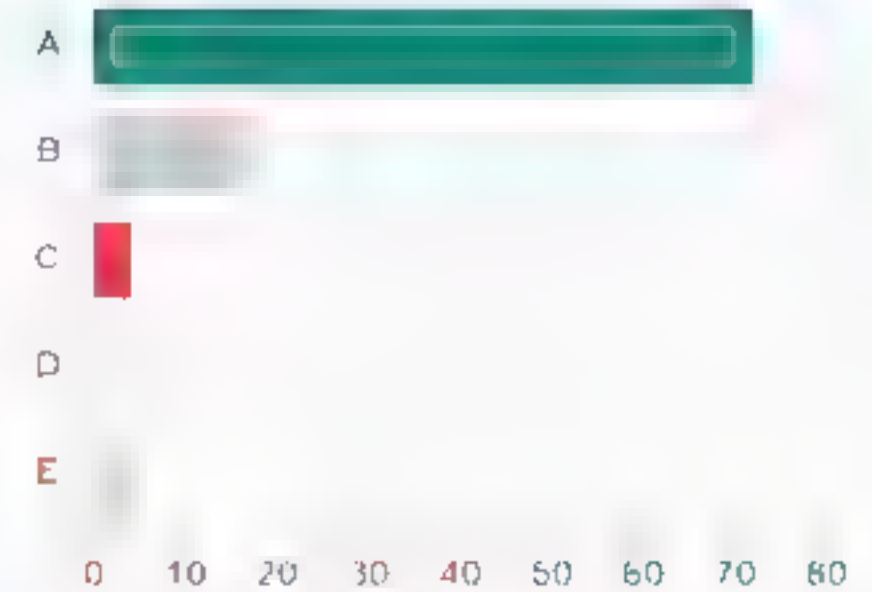
- ☐ A Amiodarone
- ☐ B Digoxin
- ☐ C Lisinopril
- ☐ D Metoprolol

Explanation

☒ A Amiodarone

Amiodarone is an antiarrhythmic medication that is known to prolong the QT interval. It affects the cardiac action potential by blocking potassium channels, which delays repolarisation and extends the duration of the action potential. This can increase the risk of Torsades de Pointes, a potentially life-threatening arrhythmia. Patients on amiodarone should have regular ECG monitoring to assess for QT prolongation and other potential side effects.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 38-year-old man presents to the General Practitioner (GP) with worsening fatigue and increased thirst over the past three months. He has a history of type II diabetes mellitus managed with metformin but reports poor glycaemic control due to GI intolerance to his medication regimen. The GP is considering adding pioglitazone to his treatment plan

What is the primary mechanism of action of pioglitazone?

☐ A Stimulation of insulin secretion from pancreatic beta cells

☒ B Inhibition of alpha-glucosidase

☐ C Stimulation of insulin secretion from pancreatic beta cells

☐ D Stimulation of insulin secretion from pancreatic beta cells

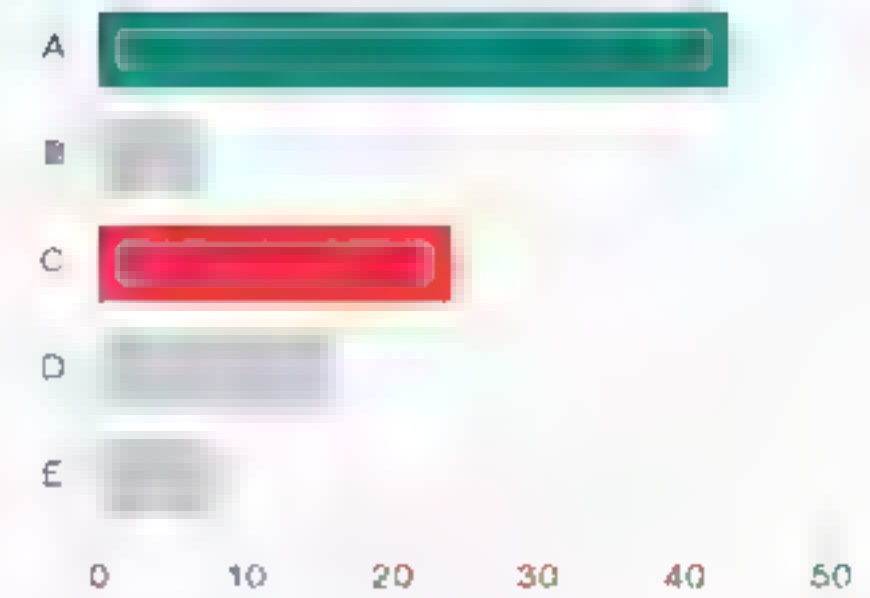
☐ E Suppression of hepatic glucose production

Explanation

☒ A Stimulation of insulin secretion from pancreatic beta cells

Pioglitazone is a thiazolidinedione that primarily enhances the sensitivity of peripheral tissues (specifically muscle and adipose tissue) to endogenous and exogenous insulin by activating peroxisome proliferator-activated receptor-gamma. This helps improve glycaemic control without significantly increasing endogenous

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

A 67-year-old man presents to the Emergency Department with sudden onset left hemiplegia and difficulty moving his right eye laterally. On examination, he has weakness in the left arm and leg, and the right eye cannot abduct past the midline.

Which of the following is the most likely location of his stroke?

1. *Journal of the American Medical Association*, 1997; 277: 1001-1005.

A Left frontal lobe

B Left occipital lobe



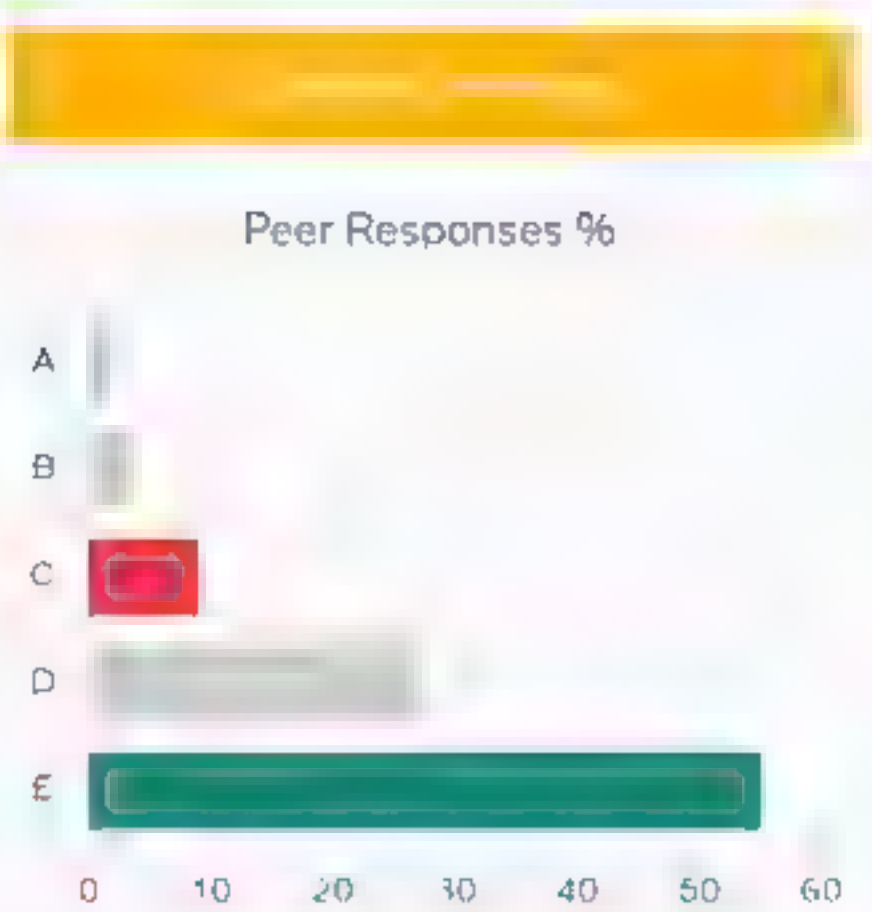
D Right medulla

E	Right pons
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### Explanation

Age Group	Percentage
18-24	10%
25-34	15%
35-44	20%
45-54	25%
55-64	30%
65-74	35%
75-84	40%
85+	45%

The right pons contains the nuclei for cranial nerve VI, which controls the lateral rectus muscle responsible for eye abduction and cranial nerve VII, causing facial nerve palsy. It also contains motor pathways that decussate, leading to contralateral hemiplegia. Therefore, a stroke in the right pons could explain both the left hemiplegia and the right eye abduction deficit, making it the most likely location of the stroke.



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[Chat with AI Tutor](#)



0 20 35/03 00 00

A 5-year-old boy is brought to the Emergency Department with his 3-year-old sister. Both children have had severe diarrhoea for the past three days and now exhibit signs of meningitis, including fever, neck stiffness and altered mental status.

What is the most likely causative agent of their meningitis?

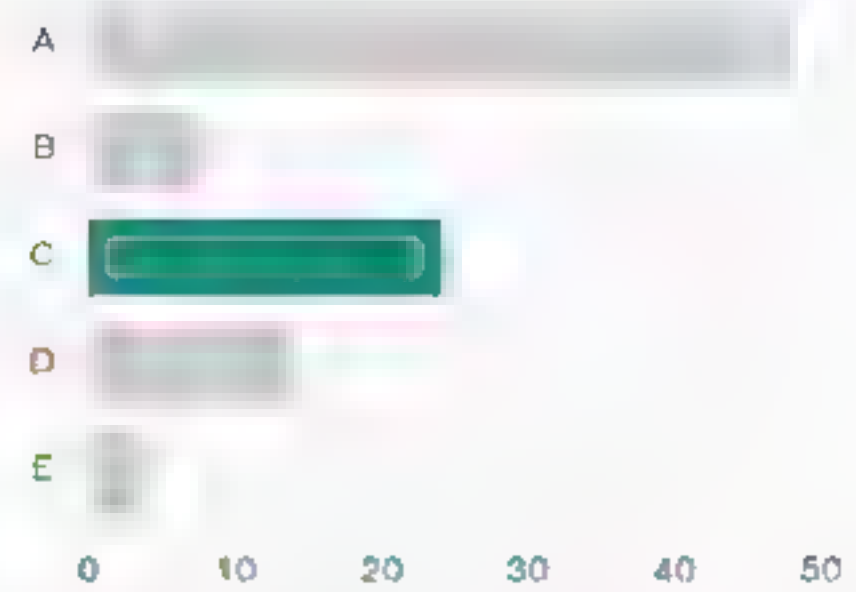
Your ans.

- A Enterovirus
- B Haemophilus influenzae
- C Listeria monocytogenes
- D Neisseria meningitidis
- E Streptococcus pneumoniae

Explanation

*Listeria monocytogenes* is a Gram-positive bacterium that can cause meningitis, particularly in neonates, elderly patients, and immunocompromised individuals. It is notable for its ability to be transmitted through contaminated food including dairy products and can cause GI symptoms such as diarrhoea before progressing to central nervous system involvement. In this vignette, the siblings' preceding diarrhoea and subsequent

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 55-year-old woman presents to her General Practitioner with a six-month history of right shoulder pain. She reports that the pain is particularly severe during movement. On examination, there is a limitation of active and passive shoulder rotation.

What is the most likely diagnosis?

- ☐ A Adhesive capsulitis
- ☐ B Deltoid injury
- ☐ C Subacromial bursitis
- ☐ D Supraspinatus tendinitis

Explanation

Adhesive capsulitis, commonly known as frozen shoulder is characterised by stiffness and pain in the shoulder joint. This condition typically presents with a gradual onset of pain and limited range of motion, with patients often experiencing severe discomfort during active movements. The condition is more common in middle-aged women and can be associated with other systemic conditions such as diabetes mellitus. The hallmark of



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Chat with AI Tutor



0 20 35/03 00 00

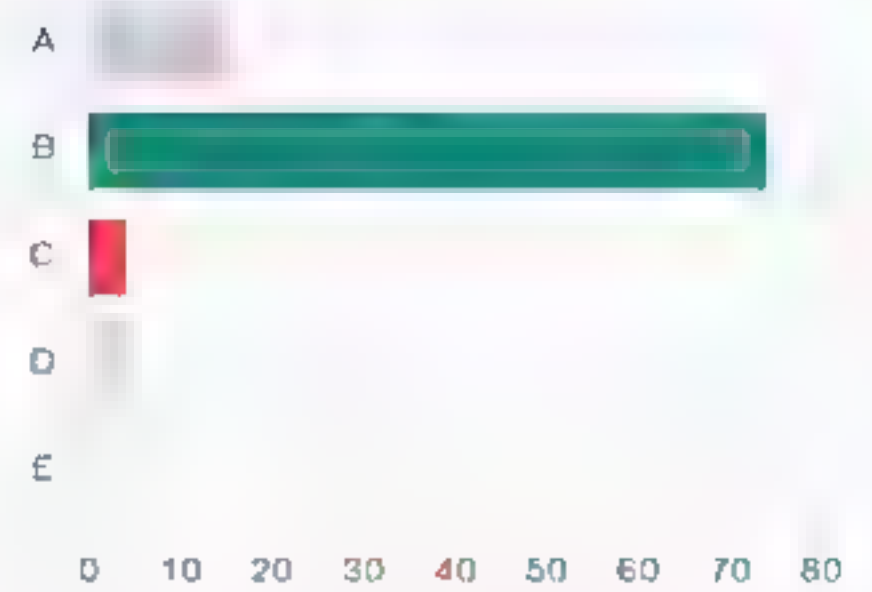
A 65-year-old man presents to the Emergency Department with a two-day history of reduced urine output, fatigue, and nausea. On examination, he has a BP of 160/95 mmHg, peripheral oedema, and bilateral chest crepitations. investigations

Creatinine	450 $\mu\text{mol/L}$	60-110 $\mu\text{mol/L}$
Urea	25 mmol/L	2.5-7.8 mmol/L
Potassium	6.2 mmol/L	3.5-5.0 mmol/L
ECG (T waves)	Peaked T waves	

What is the most appropriate next step in his management?

- 
- A Administer IV furosemide
- 
- D Order a renal ultrasound
- E Start oral sodium bicarbonate

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

What is the best initial test to diagnose *Helicobacter pylori* infection in this patient?

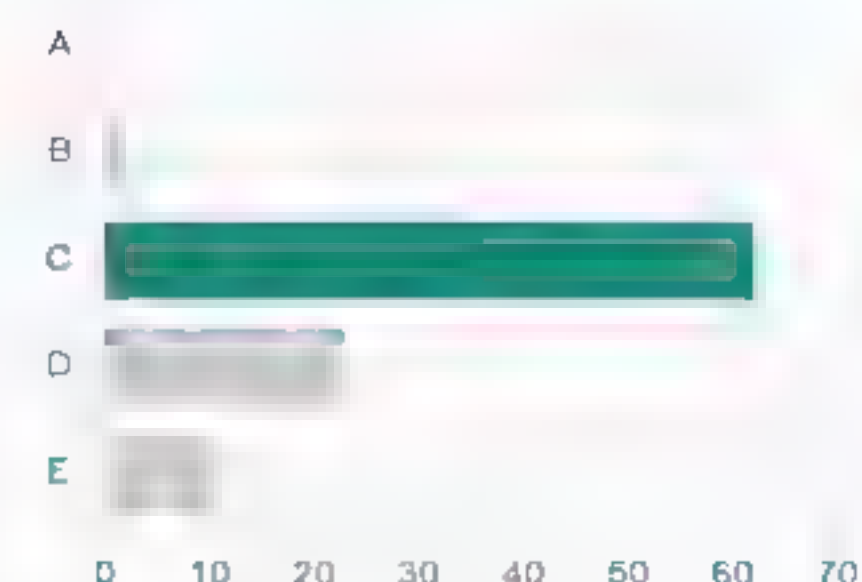
E Serum antibody test

### Explanation

### E Faecal antigen test

The faecal antigen test is a non-invasive method that detects active *H. pylori* infection by identifying antigens present in the stool, which indicates current colonisation by the bacteria. It has high sensitivity and specificity for diagnosing active infection compared to other tests like serology, which may indicate past exposure rather than current infection.

Peer Responses %



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Chat with AI Tutor



0 20:35/03 00:00

A 55-year-old man presents to the General Practitioner with progressive shortness of breath and a chronic cough. He has a 30-year history of working in mining and denies any significant smoking history. On examination, there are fine crackles at the lung bases, and a chest X-ray reveals diffuse, small, rounded opacities in the upper lobes.

What is the most likely diagnosis?

☐ A Asbestosis

A Asbestosis

B Bronchiectasis

☐ C Coal worker pneumoconiosis

☒ D Coal worker pneumoconiosis

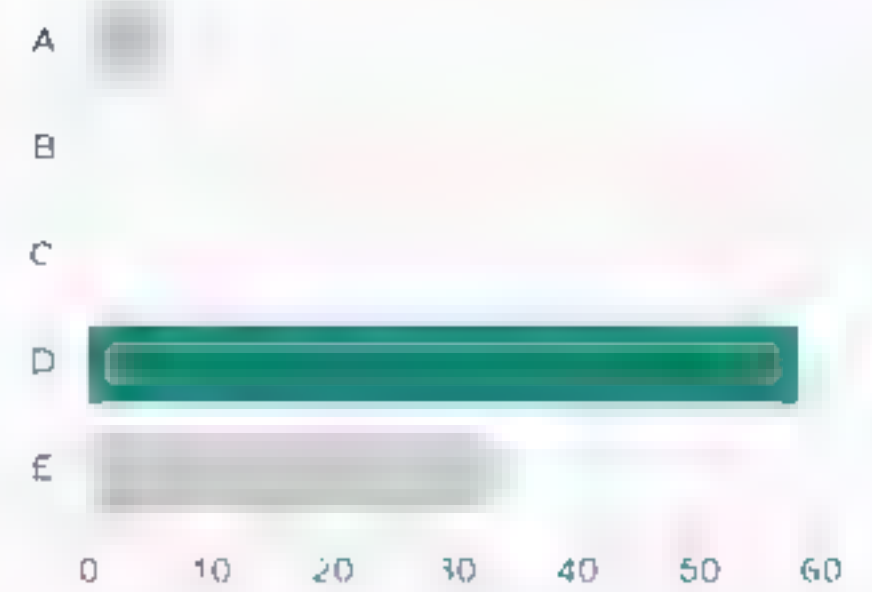
E Sarcoidosis

Explanation

☒ D Coal worker pneumoconiosis

This condition, also known as black lung disease, is common among individuals with prolonged exposure to coal dust, such as coal miners. The patient's history of working in mines for 30 years, along with radiographic findings of a diffuse distribution of small, rounded opacities favouring the upper lobes, is characteristic of this condition.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 62-year-old man presents to the General Practitioner with complaints of persistent back pain, fatigue, and recent episodes of recurrent infections. On examination, he has pallor and mild hepatosplenomegaly.

Investigations

Haemoglobin (Hb)	98 g/l	135–175 g/l
Erythrocyte Sedimentation Rate (ESR)	75 mm/hr	< 15 mm/hr
Calcium	2.87 mmol/l	2.20–2.60 mmol/l

What is the most appropriate next investigation to confirm the diagnosis?

Your answer was correct.

- A Abdominal ultrasound
- B Bone marrow biopsy
- C Serum free light chain assay
- D Skeletal survey
- E Urine Bence-Jones protein test

Explanation

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

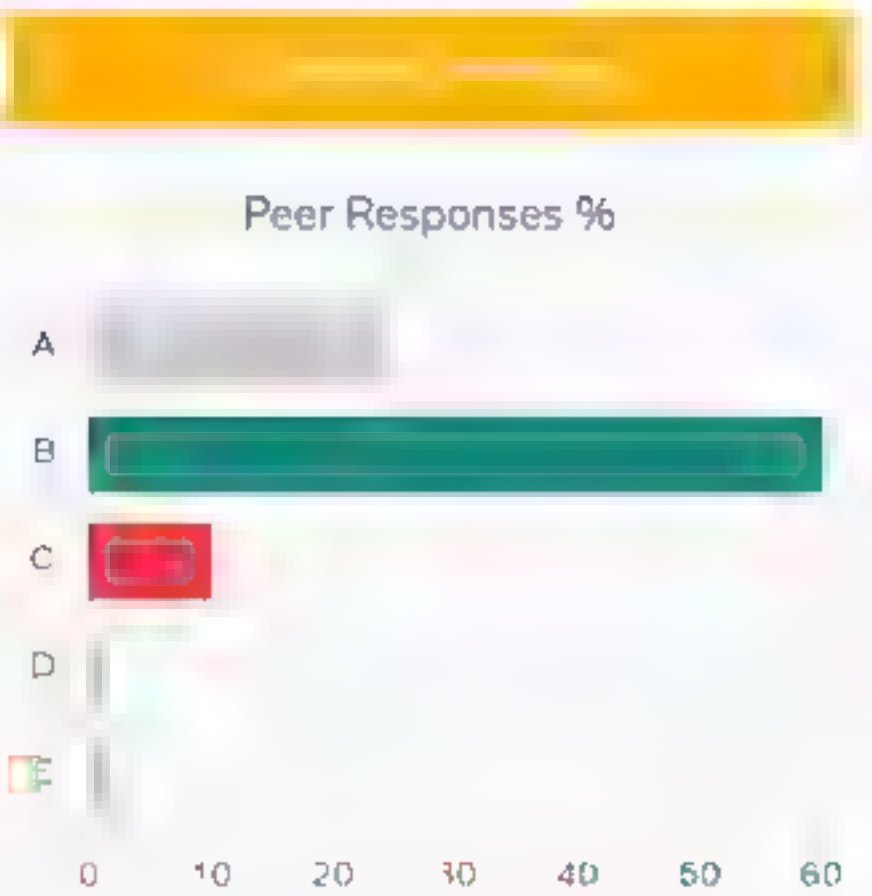
A 67-year-old woman presents to the Emergency Department with a history of AF and recent initiation of dabigatran therapy. She reports new-onset abdominal pain.

What is the mechanism by which dabigatran exerts its therapeutic effect?

- ☐ Direct inhibition of factor Xa
- ☒ Direct inhibition of thrombin
- ☐ Inhibition of vitamin K-dependent clotting factors
- ☐ Platelet adenosine diphosphate receptor blockade

Explanation

Dabigatran is a direct thrombin inhibitor, which means it binds directly to thrombin (factor IIa) preventing it from converting fibrinogen into fibrin during the coagulation process. This action effectively reduces the formation of blood clots, making it beneficial for conditions such as AF, where there is an increased risk of stroke due to embolism. Unlike warfarin, dabigatran does not act through vitamin K antagonism but rather provides anticoagulation by directly targeting thrombin itself. This specific mechanism helps in maintaining



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Create with AI Tutor



0 20 35/03 00 00

A 62-year-old man presents to the Emergency Department with sudden onset chest pain radiating to his left arm. He is a smoker with a history of hypertension and hyperlipidaemia. His ECG shows ST elevation in leads II, III and aVF.

Which coronary artery is most likely occluded?

Your ans.

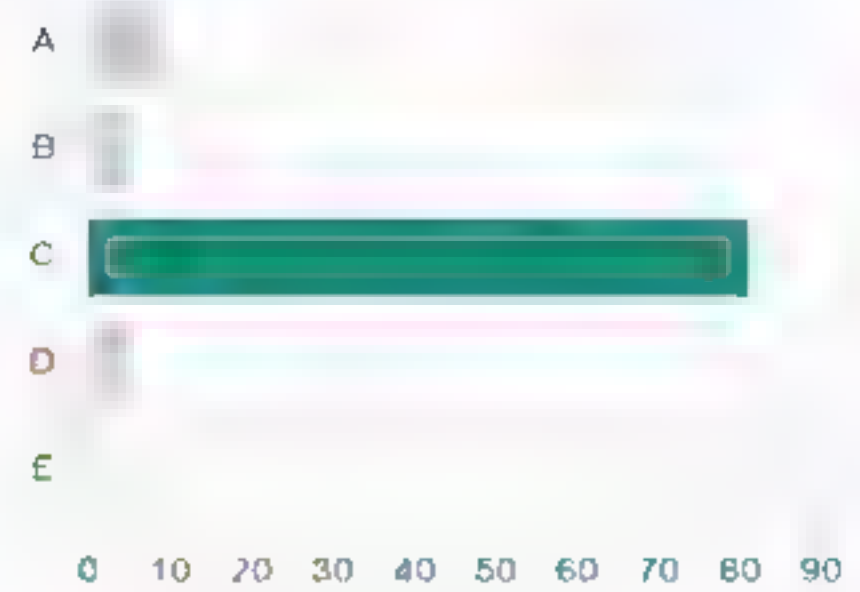
- A Left anterior descending artery
- B Left circumflex artery
- C Right coronary artery
- D Posterior descending artery
- E Left main coronary artery

Explanation

C Right coronary artery

The right coronary artery (RCA) supplies blood to the inferior wall of the left ventricle, which is reflected in the ECG by ST elevation in leads II, III and aVF. These leads correspond to the inferior aspect of the heart. Occlusion of the RCA is the most common cause of an inferior myocardial infarction. Prompt identification and treatment of RCA occlusion are crucial to prevent extensive myocardial damage and adverse outcomes.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 49-year-old man presents to his General Practitioner with a history of recurrent kidney stones. Laboratory investigations reveal hypercalciuria, hypokalaemia, and a normal serum calcium level.

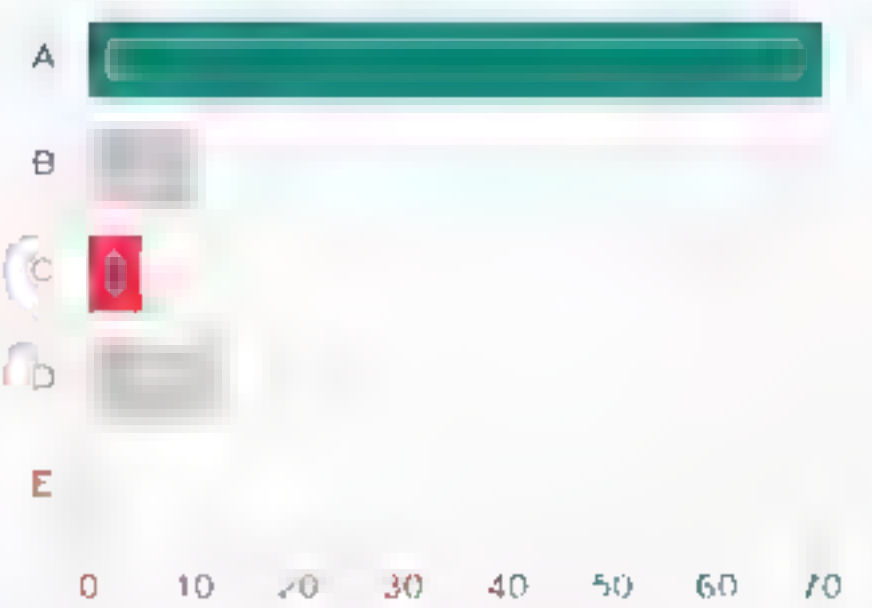
Which of the following is the most likely cause of his condition?

- ☐ A Distal renal tubular acidosis
- ☐ B Familial hypocalcaemic hypercalcaemia
- ☐ C Primary hyperoxaluria
- ☐ D Primary hyperoxaluria
- ☐ E Sarcoidosis

Explanation

Distal renal tubular acidosis (RTA) is a disorder of the renal tubules in which the kidneys fail to properly acidify the urine due to reduced hydrogen ion excretion in the distal tubule. This can lead to increased calcium excretion and hypercalciuria. The presentation of hypercalciuria, recurrent kidney stones, hypokalaemia, and normal serum calcium levels in this patient is consistent with distal RTA, making it the most likely diagnosis.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 35-year-old woman presents to the General Practitioner with a history of recurrent headaches, dizziness and vision disturbances. She has a family history of renal cell carcinoma, and multiple family members have had brain tumours. On examination, she has hypertension, cerebellar ataxia and retinal angiomas.

What is the most appropriate genetic test to confirm the suspected diagnosis?

[Redacted]

A BRCA1 BRCA2 genetic testing

B FMR1 gene analysis

[Redacted]

D VHL gene analysis

E WT1 gene analysis

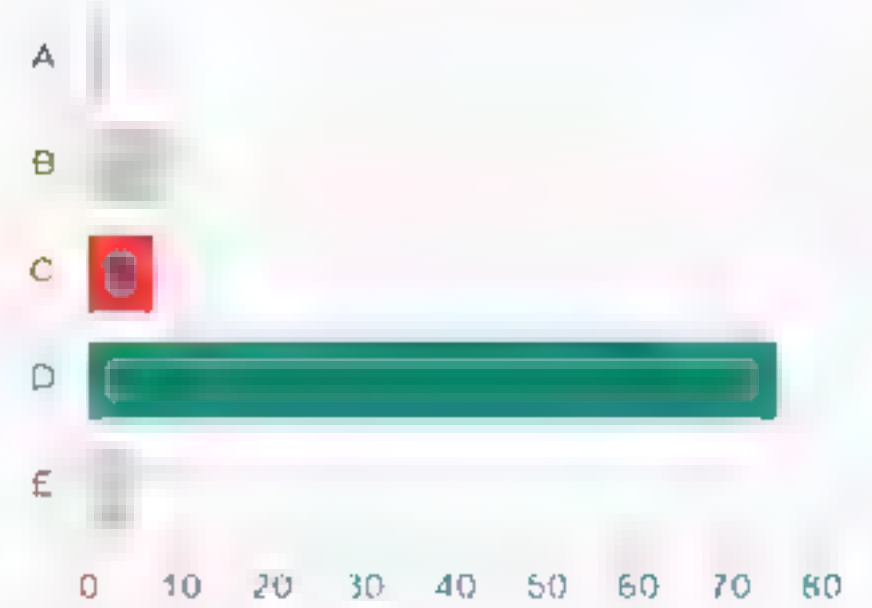
Explanation

[Redacted]

VHL gene analysis is used to diagnose Von Hippel-Lindau (VHL) syndrome, an autosomal dominant disorder characterised by the development of multiple tumours and cysts in various organs. The clinical features of VHL syndrome include retinal angiomas, cerebellar hemangioblastomas, renal cell carcinoma and pheochromocytomas which align with the patient's presentation. The family history of renal cell carcinoma

[Redacted]

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 30-year-old woman suffers a sudden drop in BP, fever, flank pain, and red urine shortly after receiving a blood transfusion following a caesarean section

What is the most appropriate test to perform next?

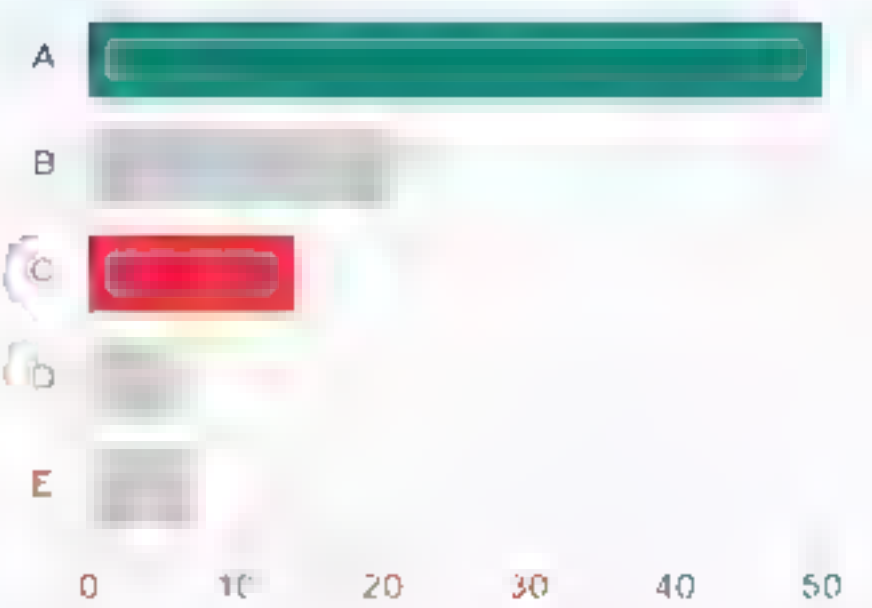
- ☐ A Direct antiglobulin test
- ☐ B Foetal and maternal blood type
- ☐ C Serum tryptase level
- ☐ D Urine haemoglobin

Explanation

☒ Direct antiglobulin test

The direct antiglobulin test (DAT), also known as the direct Coombs test, is used to detect antibodies or complement proteins attached to the surface of red blood cells. This test is crucial in the context of a suspected haemolytic transfusion reaction, which can present with symptoms such as a sudden drop in blood pressure, flank pain, and red urine. The DAT can confirm if the transfusion reaction is due to immune-mediated haemolysis, guiding further management. It helps in identifying alloimmune reactions, which are common after

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Chat with AI Tutor



0 20 35/03 00 00

A 72-year-old woman presents to the Emergency Department with muscle cramps, paraesthesia and a recent history of thyroidectomy. Her serum calcium is found to be 1.8 mmol/L (normal range 2.2 - 2.6 mmol/L)

What is the most likely cause of this patient's hypocalcaemia?

- ☐ A Chronic kidney disease
- ☒ B Hypoparathyroidism
- ☐ C Vitamin D deficiency
- ☐ D Medication side effect
- ☐ E Vitamin D deficiency

Explanation

☒ Hypoparathyroidism

Hypoparathyroidism, a common complication following thyroid surgery is the most likely cause of hypocalcaemia in this patient. During thyroidectomy the parathyroid glands, which regulate calcium levels, can be inadvertently damaged or removed. This decreases the production of parathyroid hormone (PTH), resulting in hypocalcaemia. Symptoms such as muscle cramps and paraesthesia are classic signs of hypoparathyroidism.



Peer Responses %



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Create with AI Tutor



0 20 35/03 00 00

A 52-year-old man presents to the Emergency Department with a 3-day history of fever, malaise, and reduced urine output. He underwent a renal transplant six months ago and is currently on immunosuppressive therapy. On examination, his temperature is 38.5 °C, BP is 140/90 mmHg, and there is leucopenia and thrombocytopenia.

What is the most likely cause of his symptoms?

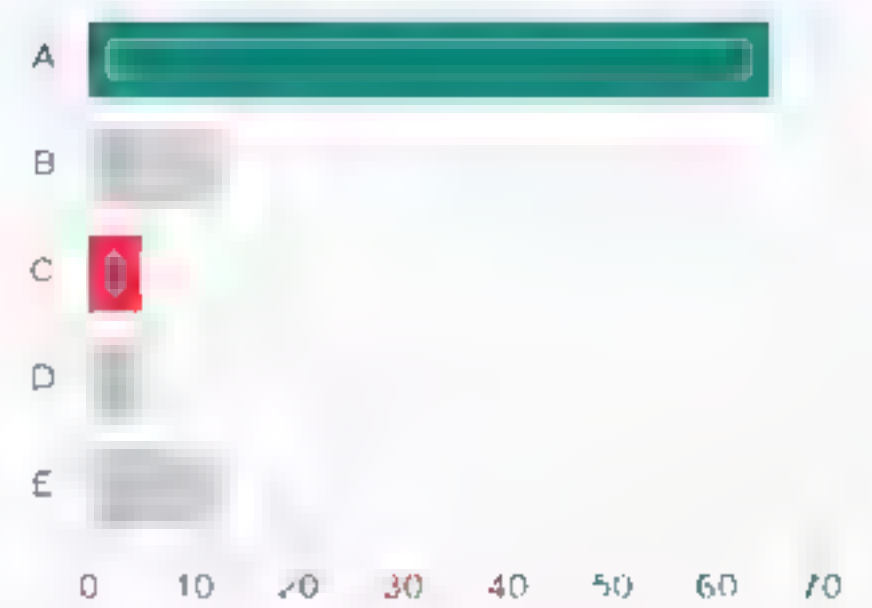
- ☐ A Post-transplant lymphoproliferative disorder
- ☒ B Cytomegalovirus infection
- ☐ C Urinary tract infection
- ☐ D Vascular thrombosis of the graft
- ☐ E Acute cellular rejection

Explanation

**Cytomegalovirus infection**

Cytomegalovirus (CMV) infection is a common post-transplant complication, especially within the first year. It often presents with systemic symptoms such as fever and malaise and can cause leucopenia and thrombocytopenia. CMV can also lead to reduced urine output due to its nephrotoxic effects. Diagnosis is

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 48-year-old woman presents to the Emergency Department with a one-week history of anterior knee pain and swelling, particularly over the patella. She reports that the pain worsens with kneeling, and there is a history of trauma. On examination, there is tenderness and a fluctuant swelling over the patella with no fever or warmth.

Which of the following is the most likely diagnosis?

**A** Pre-patellar bursitis

A Gout

B Osteoarthritis

**C** Septic arthritis

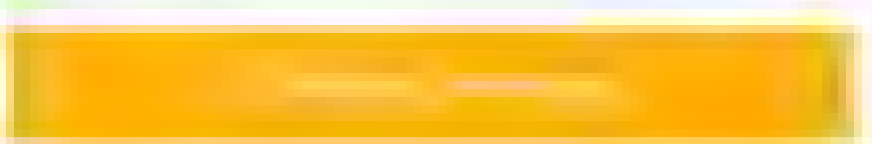
**D** Pre-patellar bursitis

E Septic arthritis

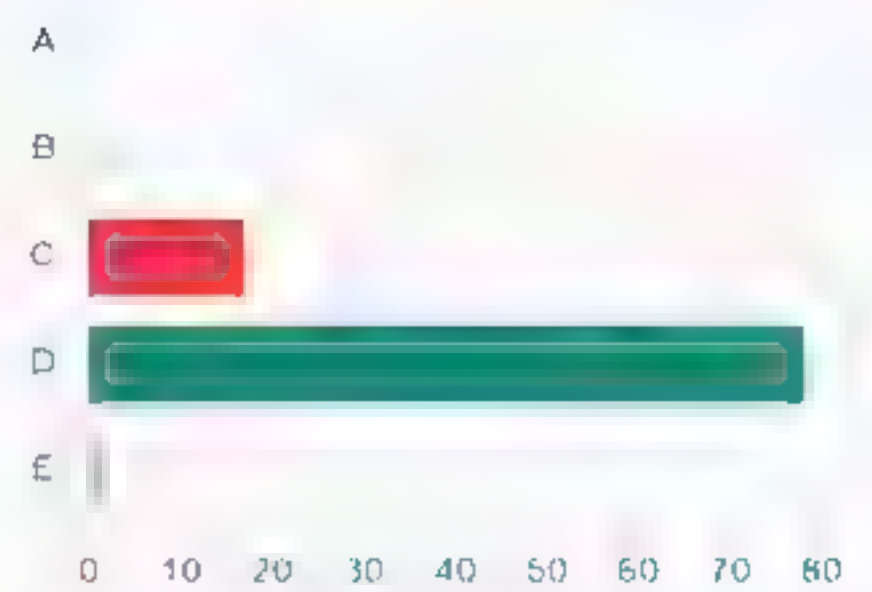
Explanation

**D** Pre-patellar bursitis

Pre-patellar bursitis typically presents with anterior knee pain and swelling directly over the patella which worsens with activities like kneeling. The patient's history and examination findings of tenderness and fluctuant swelling over the patella without signs of infection or systemic symptoms are characteristic of this condition.



Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 34-year-old man presents to the Emergency Department with lower back pain radiating down the lateral side of his right leg and numbness in the dorsum of the foot. He also reports difficulty with dorsiflexion of his right foot.

Which nerve root is most likely affected?

A L4

D C7

E T1

Explanation

This patient is most likely affected by the L5 nerve root. L5 radiculopathy commonly presents with pain radiating from the lower back to the lateral side of the legs and dorsum of the foot, often described as sharp or burning. Patients may also experience numbness or tingling in the foot and difficulty with foot dorsiflexion due to weakness in the anterior tibial muscle. These symptoms align well with the patient's presentation, making

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Chat with AI Tutor



0:20:35/03:00:00

A 25-year-old woman presents to the Emergency Department 45 minutes after ingesting 50 tablets of paracetamol. She reports feeling nauseous but is otherwise asymptomatic.

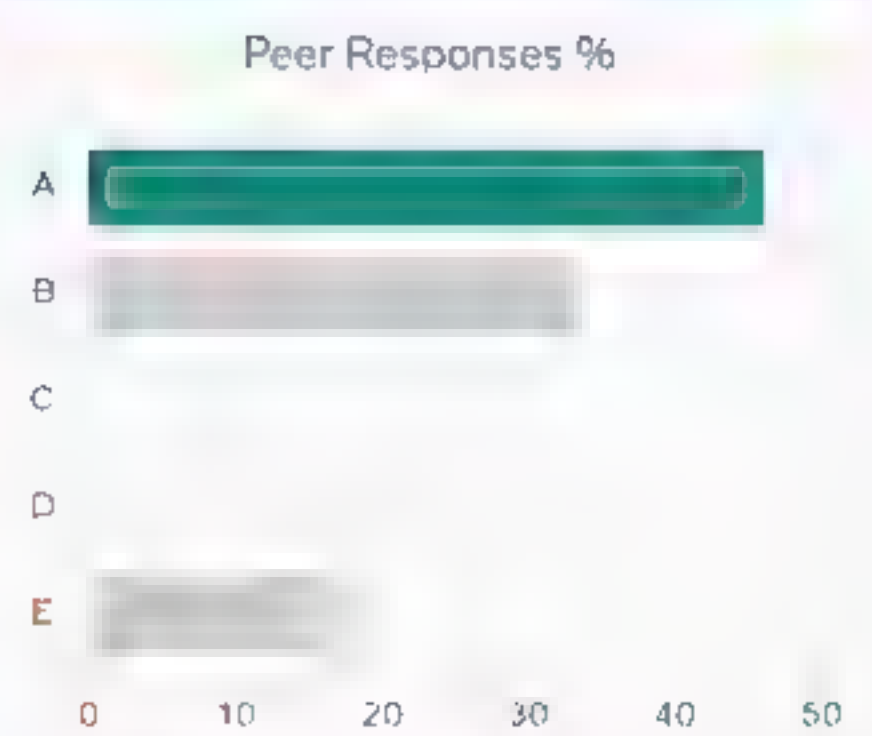
What is the most appropriate next step in her management?

- ☐ A Administer N-acetylcysteine
- ☒ B Administer activated charcoal
- ☐ C Take serum paracetamol level
- ☐ D Flumazenil
- ☐ E Take serum paracetamol level

Explanation

Administering activated charcoal within one hour of ingestion is the most appropriate next step because it can significantly reduce the absorption of paracetamol. Given that she presented within this timeframe, it remains a viable and effective intervention. Activated charcoal binds to the drug in the GI tract, preventing its systemic absorption and thereby reducing the risk of toxicity. This early intervention can prevent the progression of hepatic damage.

Peer Responses %



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Chat with AI Tutor



A 51-year-old man presents to his General Practitioner with pain in his right elbow that has been worsening over the past two months. He reports that the pain is exacerbated by wrist extension and gripping activities and he sometimes feels a burning sensation extending down his forearm. On examination, there is tenderness over the lateral epicondyle of the humerus, and resisted wrist extension reproduces the pain.

**What is the most likely diagnosis?**

A Cubital tunnel syndrome

B Golfer's elbow

### E Ulnar neuropathy

### Explanation

Tennis elbow, or lateral epicondylitis, is characterised by pain and tenderness over the lateral epicondyle of the humerus, which is exacerbated by activities involving wrist extension and gripping. The condition results from overuse of the extensor muscles of the forearm, particularly the extensor carpi radialis brevis, like tennis or the

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## Chat with AI Tutor



0 20 35/03 00 00

A 25-year-old woman presents to the General Practitioner with multiple small, hypopigmented macules on her upper trunk and arms that have been present for several months. She reports mild pruritus but no other symptoms. On examination, the macules have a fine scale when scraped

What is the most appropriate initial treatment for her condition?

Your ans.

A PO fluconazole

B PO terbinafine

☒ C Topical clotrimazole

D Topical hydrocortisone

E Topical tacrolimus

Explanation

☒ Topical clotrimazole

Topical clotrimazole is the best initial treatment for pityriasis versicolor (also known as tinea versicolor). This condition is caused by an overgrowth of Malassezia species, which are part of normal skin flora. Clotrimazole is an antifungal medication that effectively targets these fungi and helps restore normal pigmentation over time. The topical formulation directly addresses the affected skin areas with minimal systemic absorption, reducing

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Chat with AI Tutor



0 20 35/03 00 00

A 43-year-old man presents to the General Practitioner with complaints of recurrent peptic ulcers and chronic diarrhoea. On examination, he has epigastric tenderness and a positive family history of endocrine tumours.

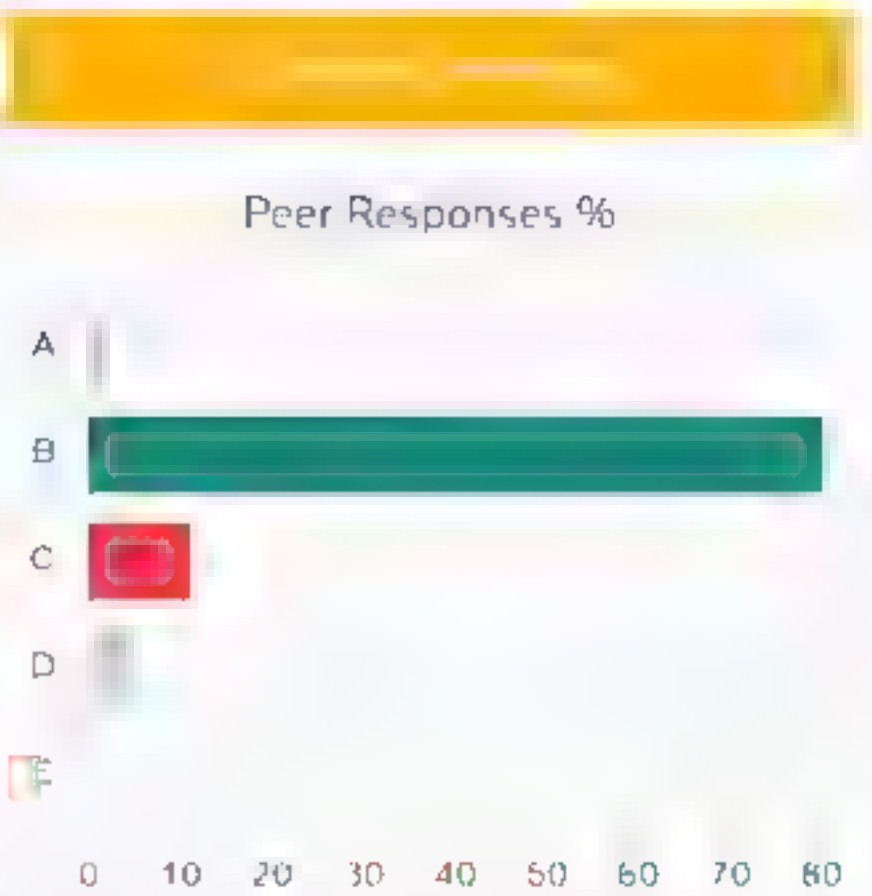
What is the best initial test to confirm the most likely diagnosis in this patient?

- ☐ A 24-hour urinary free cortisol.
- ☒ B Fasting serum gastrin levels.
- ☐ C Serum parathyroid hormone-related protein (PTHrP) levels.
- ☐ D Serum calcium levels.
- ☐ E Thyroid function tests.

Explanation

☒ B Fasting serum gastrin levels.

Recurrent peptic ulcers and chronic diarrhoea in a patient with a family history of endocrine tumours strongly suggest Zollinger-Ellison syndrome (ZES), which involves gastrin-secreting tumours (gastrinomas). Gastrinomas are one of the hallmark features of multiple endocrine neoplasia (MEN) type 1, along with parathyroid adenomas and pituitary tumours. Measuring fasting serum gastrin levels would help confirm ZES, making it an appropriate first step in diagnosing MEN type 1.



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Chat with AI Tutor



0 20 35/03 00 00

A 45-year-old man presents to the Emergency Department with fatigue, weight loss and night sweats over the past three months. On examination, he has splenomegaly and pallor. Blood tests reveal a white blood cell count of  $120 \times 10^9/L$  with a differential showing increased granulocytes at all stages of maturation, anaemia and thrombocytosis.

What is the most likely diagnosis?

- A Acute myeloid leukaemia
- B Chronic lymphocytic leukaemia
- C Chronic myeloid leukaemia
- D Essential thrombocythaemia
- E Myelofibrosis

Explanation

Chronic myeloid leukaemia (CML) often presents with fatigue, weight loss and night sweats. The hallmark of CML is a markedly elevated white blood cell count with a full spectrum of granulocytic cells from blasts to mature neutrophils, as seen in this patient. Mild to moderate normochromic normocytic anaemia and low,

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Chat with AI Tutor



0 20 35/03 00 00

A 49-year-old man presents to the Emergency Department with sharp chest pain that worsens when lying down and improves when leaning forward. His ECG shows diffuse ST elevation and PR depression, and his inflammatory markers are elevated

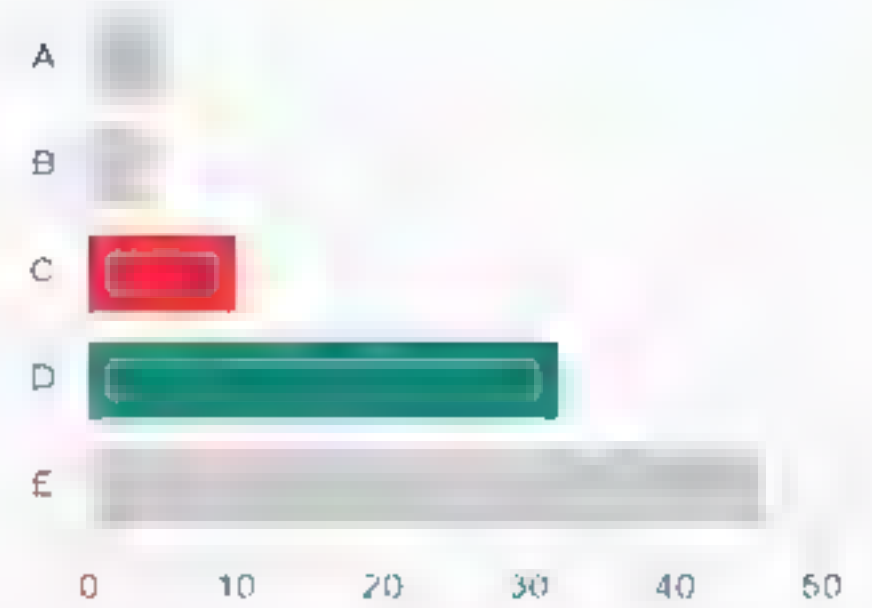
What is the most likely benefit of using colchicine in this patient?

- ☐ A Decrease in heart failure risk
- ☐ B Prevention of arrhythmias
- ☒ C Reduction in recurrence risk
- ☐ D Symptomatic relief within 24 hours
- ☐ E Symptomatic relief within 24 hours

Explanation

Colchicine is well documented in clinical trials to significantly reduce the recurrence rate of pericarditis. It achieves this by its anti-inflammatory properties, which help in controlling the inflammation of the pericardial sac. Studies have shown that when colchicine is added to standard therapy, the chances of pericarditis returning are much lower compared to standard therapy alone.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 68-year-old woman presents to her General Practitioner with chronic constipation and severe bone pain requiring opioid therapy. She has a history of ovarian cancer and irritable bowel syndrome (IBS) and is concerned about the potential GI side effects of opioids

Which opioid is less likely to cause constipation?

**Fentanyl**

A Codeine

**Fentanyl**

**Morphine**

D Morphine

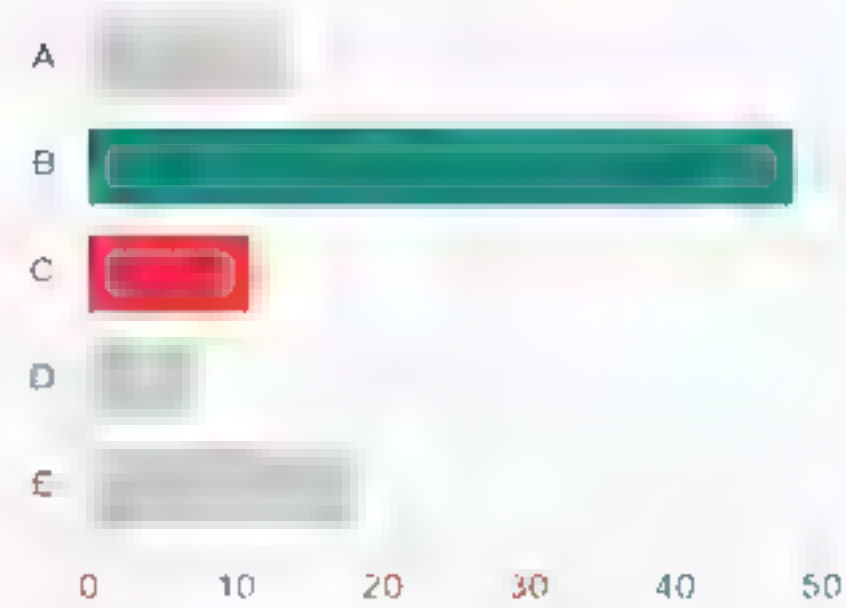
E Oxycodone

Explanation

**Fentanyl**

Fentanyl is a potent synthetic opioid that is less likely to cause constipation compared to other opioids due to its unique pharmacokinetic properties and high lipid solubility, which allows it to be administered via transdermal patches or intravenous routes, bypassing the GI tract entirely in some cases. This minimises direct interaction with gut opioid receptors, reducing the risk of constipation significantly.

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Chat with AI Tutor



0 20 35/03 00 00

A 28-year-old man presents to the General Practitioner with new-onset seizures. On examination, he has multiple hypopigmented macules on his trunk and a shagreen patch on his lower back. Fundoscopy reveals retinal hamartomas.

What is the most likely diagnosis?

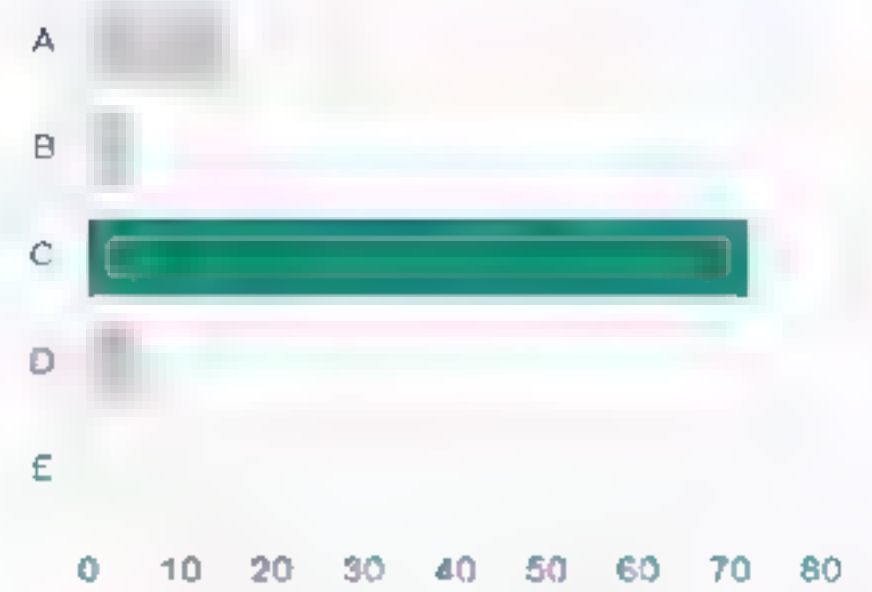
Your ans.

- A Neurofibromatosis type 1
- B Sturge-Weber syndrome
- C Tuberous sclerosis complex
- D Von Hippel-Lindau disease
- E Waardenburg syndrome

Explanation

Tuberous sclerosis complex (TSC) is an autosomal-dominant disorder characterised by the presence of skin lesions such as hypopigmented macules (ash-leaf spots), shagreen patches, and facial angiofibromas. Seizures are a common neurological manifestation in patients with TSC and often lead to its diagnosis. Retinal hamartomas are another feature that supports this diagnosis, as they are benign growths typically seen in

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Chat with AI Tutor



0 20 35/03 00 00

A 32-year-old woman presents to the Emergency Department with palpitations, weight loss and tremors. On examination, she has a diffusely enlarged thyroid gland and exophthalmos

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Thyroid stimulating hormone (TSH)	< 0.01 mU/L	0.4-4.2 mU/L
Free T4	34 pmol/L	10-22 pmol/L

What is the best step in assessing the diagnosis?

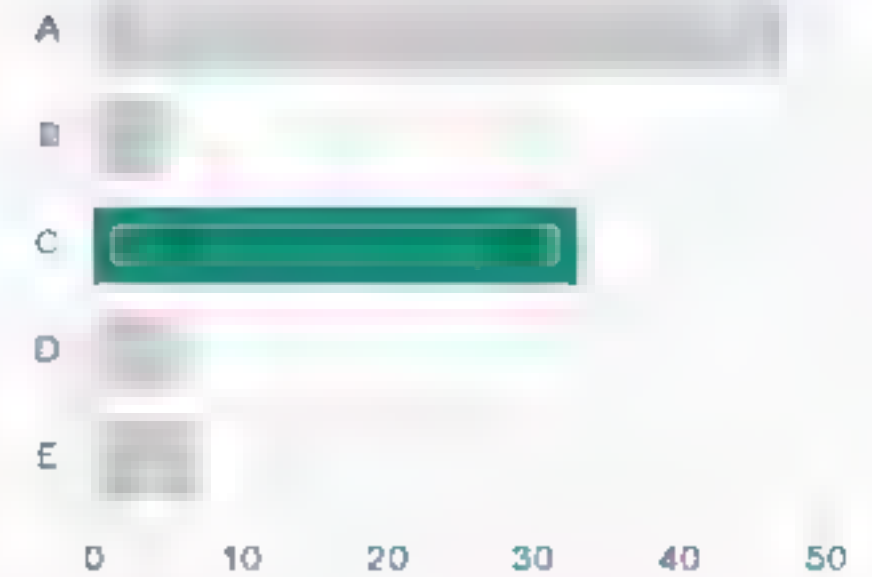
Radioactive iodine uptake test

- A Anti-thyroid peroxidase antibodies
- B Fine needle aspiration biopsy of the thyroid
- C Radioactive iodine uptake test
- D Serum thyroglobulin measurement
- E Thyroid ultrasound

Explanation

Radioactive iodine uptake test

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

A 55-year-old man presents to the Emergency Department after experiencing a sudden loss of consciousness. He reports no preceding aura or convulsions and regained consciousness spontaneously after a few seconds. On examination, his BP is 110/70 mmHg and his heart rate is 40 bpm and regular.

What is the most likely diagnosis?

A Atrial fibrillation

B Epileptic seizure

D Situational syncope

Explanation

Third-degree heart block, or complete heart block, is characterised by a complete dissociation between atrial and ventricular activity, leading to a significantly slow ventricular rate, often around 30-50 bpm. This can result in insufficient cardiac output and transient loss of consciousness. The patient's bradycardia (40 bpm) and the lack of other preceding neurological symptoms strongly suggest a cardiac cause. Third-degree heart block can

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Chat with AI Tutor



0:20:35/03:00:00

A 51-year-old man presents to the Emergency Department with a history of cirrhosis and increasing abdominal distension. He reports decreased urine output over the past week and significant fatigue. On examination, there is marked ascites, peripheral oedema and mild jaundice.

**What is the best next step in managing this patient's renal condition?**

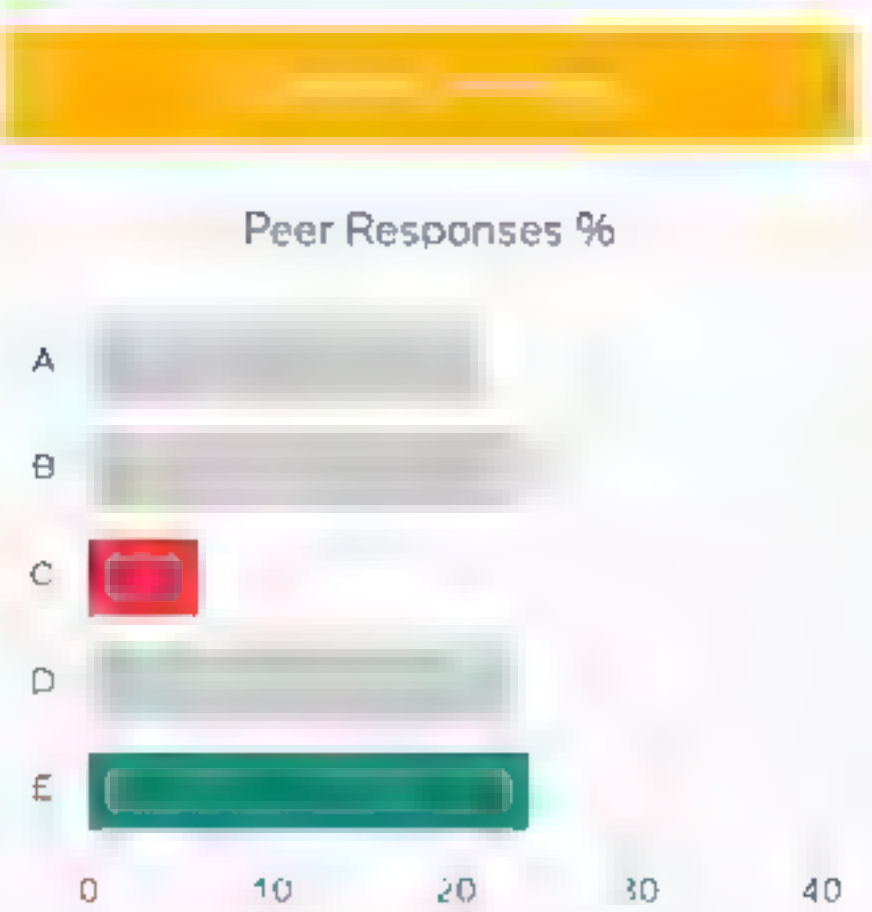
- A Administer albumin

E	Start terlipressin therapy
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### Explanation

E	Start terlipressin therapy
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Hepatorenal syndrome (HRS) type 1 is characterised by rapid renal failure due to splanchnic vasodilation in patients with severe liver disease, such as cirrhosis. Teripressin is a vasopressor that helps constrict splanchnic vessels, improving renal perfusion and function. It has been shown to be effective in reversing HRS when used along with albumin infusion, which expands plasma volume.



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Chat with AI Tutor



0 20 35/03 00 00

A 45-year-old man presents to his General Practitioner with a six-month history of episodic wheezing, shortness of breath and chest tightness that improves during weekends and holidays. He works as a spray painter in an automobile factory.

What is the most likely diagnosis?

Your ans.

- A Chronic obstructive pulmonary disease
- B Exercise-induced asthma
- C Occupational asthma
- D Sarcoidosis
- E Vocal cord dysfunction

Explanation

C Occupational asthma

Occupational asthma is caused by exposure to allergens or irritants in the workplace. The patient's symptoms of wheezing, shortness of breath and chest tightness, which improve during weekends and holidays, align with this diagnosis. His occupation as a spray painter exposes him to various respiratory irritants, making occupational asthma the most likely diagnosis. Proper diagnosis and management often require detailed



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Chat with AI Tutor



A 49-year-old man presents to the Emergency Department with nausea, vomiting, and muscle weakness. He was recently diagnosed with acute myeloid leukaemia and started chemotherapy five days ago

Potassium (K <sup>+</sup> )	6.2 mmol/L	3.5-5.0 mmol/L
Phosphate (PO <sub>4</sub> <sup>3-</sup> )	1.8 mmol/L	0.81 to 1.45 mmol/L
Calcium (Ca <sup>2+</sup> )	1.95 mmol/L	2.20-2.60 mmol/L
Urea acid	0.6 mmol/L	0.23-0.46 mmol/L
Creatinine	180 µmol/L	50-120 µmol/L
Lactate Dehydrogenase (LDH)	900 U/L	140-280 U/L

What is the most likely diagnosis?

- ☐ A Acute kidney injury
- ☐ B Hypercalcaemia of malignancy
- ☒ C Rhabdomyolysis
- ☐ D Sepsis

Peer Responses %



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Create with AI Tutor



0 20 35/03 00 00

A 52-year-old man presents to the Emergency Department with worsening abdominal discomfort and pancytopenia. He has a history of alcoholic liver disease and has abstained from alcohol for the past 12 months. On examination, his abdomen is distended, and he has splenomegaly.

What is the most likely cause of his current presentation?

Your ans.

- A Autoimmune hepatitis
- B Hepatocellular carcinoma
- C Hypersplenism
- D Portal vein thrombosis
- E Zieve syndrome

Explanation

Hypersplenism

Hypersplenism is a condition frequently associated with chronic liver disease, particularly cirrhosis, which leads to portal hypertension. The increased pressure in the portal venous system causes the spleen to enlarge (splenomegaly), resulting in the sequestration and destruction of blood cells. This can lead to pancytopenia manifested by a decrease in all blood cell lines: red cells, white cells, and platelets. Given the patient's history

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Chat with AI Tutor



0:20:35/03:00:00

A 29-year-old woman presents to her General Practitioner with a 3-month history of fatigue, joint pain, and a facial rash. Laboratory investigations reveal the presence of anti-Smith antibodies.

What is the most likely diagnosis?

- ☐ A Mixed connective tissue disease
- ☐ B Rheumatoid arthritis
- ☒ C Systemic lupus erythematosus
- ☐ D Sjögren's syndrome
- ☐ E Systemic sclerosis

Explanation

☒ Systemic lupus erythematosus

Systemic lupus erythematosus (SLE) is the most likely diagnosis in this patient, given her symptoms of fatigue, joint pain, and a facial rash, combined with the presence of anti-Smith antibodies. Anti-Smith antibodies have low sensitivity but are highly specific for SLE and rarely found in other conditions. The presence of these antibodies, along with the clinical features, strongly supports the diagnosis of SLE. SLE is an autoimmune disease that can affect multiple organ systems, and early diagnosis is crucial for appropriate management.

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Chat with AI Tutor



A 49-year-old woman presents to the Emergency Department with a three-day history of fever, jaundice and right upper quadrant abdominal pain. She also reports chills and dark urine. Physical examination reveals tenderness over the right upper quadrant and mild hepatomegaly.

What is the most appropriate initial test to diagnose this patient?

A Abdominal CT scan

D LFTs

E Magnetic resonance cholangiopancreatography

### Explanation

Abdominal ultrasound is the most appropriate initial diagnostic test for ascending cholangitis. It is a non-invasive, widely available and cost-effective imaging modality that can quickly provide information about the biliary tree, liver and gallbladder. In the context of ascending cholangitis, ultrasound can identify biliary ductal dilatation, the presence of gallstones or other biliary obstructions. Prompt diagnosis is crucial in ascending

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Chat with AI Tutor



0 20 35/03 00 00

A 58-year-old man presents to the Emergency Department with acute shortness of breath and chest pain. He has a history of hypertension and chronic kidney disease. On examination, his BP is 180/110 mmHg, and he has bilateral pitting oedema.

What is the mechanism by which angiotensin II is contributing to this patient's symptoms?

Your ans.

- A Decreased aldosterone production
- B Increased renal perfusion
- C Direct vasoconstriction of arterioles
- D Increased atrial natriuretic peptide
- E Increased bradykinin levels

Explanation

C Direct vasoconstriction of arterioles

Angiotensin II is a potent vasoconstrictor that acts directly on arterioles to increase peripheral vascular resistance, leading to elevated BP. This mechanism is particularly important in patients with hypertension as it exacerbates the workload on the heart and can precipitate symptoms such as shortness of breath and chest pain. Additionally, vasoconstriction reduces renal blood flow, which can further worsen kidney function and

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Chat with AI Tutor



0 20 35/03 00 00

A 32-year-old man presents to the Emergency Department with a two-week history of painful, swollen knees and ankles, along with conjunctivitis and dysuria. He recently had an episode of gastroenteritis after eating at a barbecue.

What is the most appropriate initial management for his condition?

☐ A Azathioprine

☒ B Indomethacin

☐ C Colchicine

D Prednisolone

E Sulfasalazine

Explanation

☒ B Indomethacin

Indomethacin is an NSAID that is considered the first-line treatment for reactive arthritis. It helps reduce inflammation and alleviate pain in the affected joints. Given the patient's recent history of gastroenteritis and the classic triad of arthritis, conjunctivitis, and urethritis, reactive arthritis is the most likely diagnosis. NSAIDs are effective in managing the acute symptoms of reactive arthritis, providing symptomatic relief and improving

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Chat with AI Tutor



0:20:35/03:00:00

**What is the most likely diagnosis?**

### B Familial combined hyperlipidaemia

### E Familial hypertriglyceridaemia

### Explanation

Familial hypercholesterolaemia (FH) is an autosomal dominant disorder characterised by high low-density lipoprotein (LDL) cholesterol levels and an increased risk of cardiovascular disease. Tendon xanthomas, particularly in the Achilles tendons, are a hallmark feature of FH due to the deposition of cholesterol-rich material in tendons. Patients often present with physical findings such as these nodules, along with a

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Chat with AI Tutor



0 20 35/03 00 00

A 35-year-old woman presents to her General Practitioner with a five-day history of abdominal pain, a large volume of bloody diarrhoea and fever. She reports that she recently returned from a camping trip where she consumed undercooked chicken. On examination, she has mild tenderness in the lower abdomen but no guarding or rebound tenderness.

What is the most likely causative organism?

*Escherichia coli*

*Campylobacter jejuni*

B *Clostridium difficile*

*Salmonella enteritidis*

D *Salmonella enteritidis*

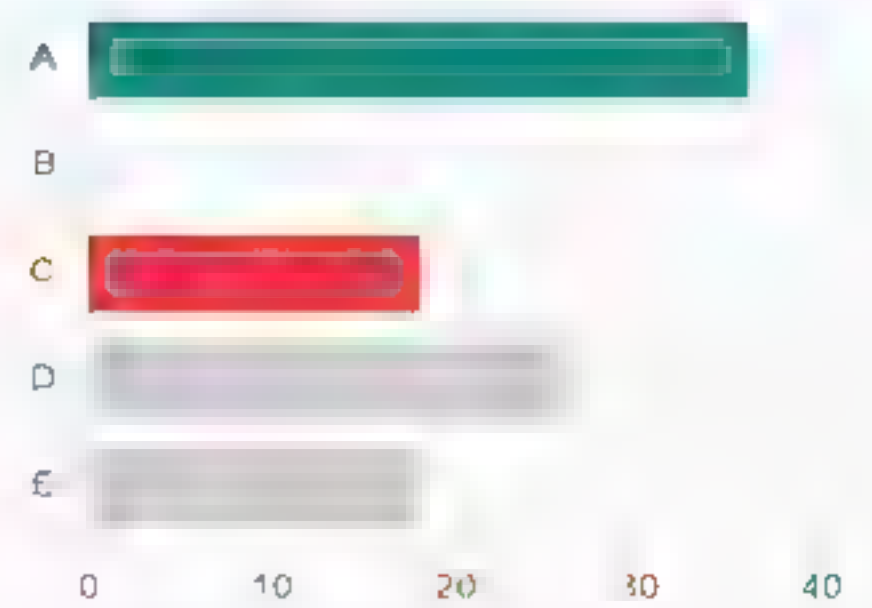
E *Shigella dysenteriae*

Explanation

*Campylobacter jejuni*

*Campylobacter jejuni* is one of the most common causes of bacterial gastroenteritis and is frequently associated with consuming undercooked poultry or contaminated water, which fits this patient's history. The clinical presentation typically includes abdominal pain, fever and voluminous diarrhoea, commonly bloody.

Peer Responses %



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Create with AI Tutor



0 20:35/03:00:00

A 72-year-old man presents to his General Practitioner with urinary frequency, nocturia and difficulty starting his stream. His PSA level is elevated, and a digital rectal examination reveals a hard, irregular prostate.

What is the most appropriate step for a definitive diagnosis of this patient?

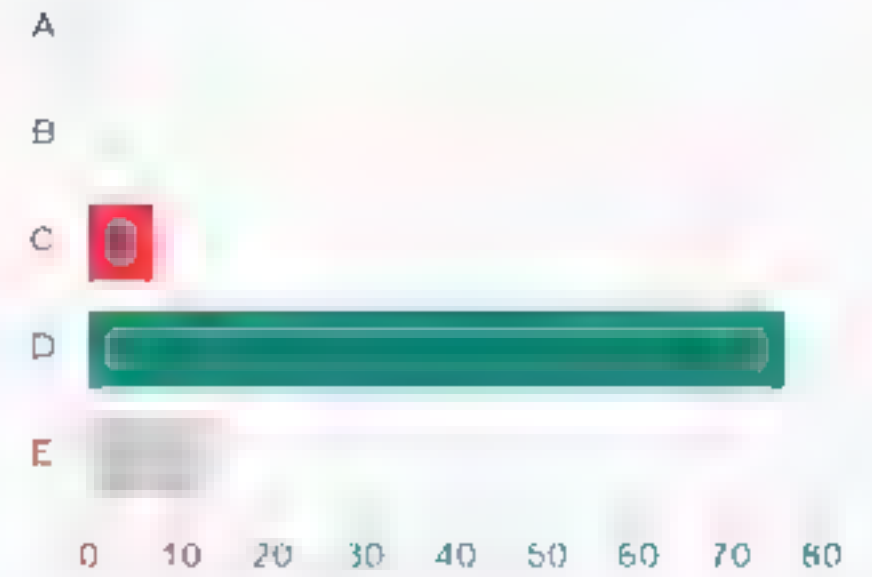
- ☐ Prostate biopsy
- ☐ Abdominal ultrasound
- ☐ Bone scan
- ☐ Prostate MRI
- ☐ Transurethral resection of the prostate

Explanation

☐ Prostate biopsy

A prostate biopsy is the most appropriate step in management for this patient. Given the elevated PSA and the hard, irregular findings on digital rectal examination, a biopsy is necessary to confirm the diagnosis of prostate cancer. Histological examination of prostate tissue obtained via biopsy will provide definitive evidence of malignancy, which is essential before any further management or staging investigations can be planned. This procedure will help guide the treatment plan and provide prognostic information.

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

A 38-year-old woman presents to her General Practitioner with fatigue and weight gain over the past six months. Blood tests reveal **elevated serum cholesterol**. On further questioning, she reports cold intolerance, constipation and dry skin.

Which of the following is the most likely underlying cause of her dyslipidaemia?

Your answer:

- A Chronic kidney disease
- B Cushing's syndrome
- C ☒ Hypothyroidism
- D Obstructive sleep apnoea
- E Type II diabetes mellitus

Explanation

Your answer:

Hypothyroidism is a common cause of secondary hyperlipidaemia due to decreased clearance of low density lipoprotein (LDL) as thyroid hormone stimulates LDL-C degradation and the conversion of cholesterol to bile acids. The patient's symptoms of fatigue, weight gain, cold intolerance, constipation and dry skin are classic for hypothyroidism. Additionally hypothyroid patients often present with elevated cholesterol levels due to

Peer Responses %



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Q1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Chat with AI Tutor



0 20 35/03 00 00

A 45-year-old man presents to the Emergency Department with difficulty opening his mouth and back spasms. He reports a recent puncture wound on his foot while gardening. His vital signs are stable, and there is no sign of infection at the wound site.

What is the most likely causative organism?

- ☐ *Clostridium botulinum*
- ☐ *Clostridium difficile*
- ☒ *Clostridium tetani*
- ☐ *Escherichia coli*
- ☐ *Staphylococcus aureus*

Explanation

*C. tetani* is a Gram-positive, rod-shaped anaerobic bacterium that causes tetanus. The bacterium produces a potent neurotoxin called tetanospasmin, which interferes with neurotransmitter release and causes the characteristic muscle rigidity and spasms seen in tetanus. The patient's symptoms of trismus (lockjaw) and muscle spasm, combined with a recent puncture wound, are classic signs of tetanus infection. Proper wound

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

What is the most appropriate initial pharmacological treatment for her symptoms?

E Tamsulosin

### Explanation

Oxybutynin is an anticholinergic medication that relaxes the bladder's smooth muscles, thereby reducing the symptoms of detrusor hyperreflexia or overactive bladder. In patients with multiple sclerosis, detrusor hyperreflexia is a common cause of urge incontinence due to the upper motor neuron bladder, which leads to a small, hyperreflexia, overactive bladder. By blocking acetylcholine receptors in the bladder wall, oxybutynin helps decrease involuntary bladder contractions and increases bladder capacity, alleviating the symptoms of

Peer Responses %



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Q9

4

Chat with AI Tutor



0 20 35/03 00 00

A 52-year-old woman presents to the General Practitioner with a persistent cough, fatigue and unintentional weight loss over the past three months. She has a history of HER-2 positive breast cancer treated with surgery and adjuvant chemotherapy two years ago. Imaging studies now reveal multiple pulmonary nodules

Which of the following is the most appropriate next step in management?

**Trastuzumab**

A Begin chemotherapy with doxorubicin and cyclophosphamide

**Trastuzumab**

**Trastuzumab**

D Recommend palliative care and symptom management

E Start hormonal therapy with tamoxifen

Explanation

**Trastuzumab**

Trastuzumab is a monoclonal antibody that specifically targets the HER-2/neu receptor which is overexpressed in some breast cancers. Given the patient's history of breast cancer, it is likely that the pulmonary nodules represent metastatic disease. HER 2 positive breast cancer responds well to trastuzumab which has been shown to improve survival and reduce tumour burden. Therefore, initiating HER-2 targeted

**Trastuzumab**

Peer Responses %



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Chat with AI Tutor



02035/030000

A 65-year-old woman presents to the Emergency Department with her daughter, who reports that her mother has become increasingly agitated over the past two days. She has been observed searching through the nurses' bags, insisting that her belongings have been stolen. Her medical history includes hypertension and type II diabetes mellitus.

What is the most likely diagnosis?

**Paranoid schizophrenia**

A Bipolar disorder

**Delirium**

**Substance intoxication**

D Paranoid schizophrenia

E Substance intoxication

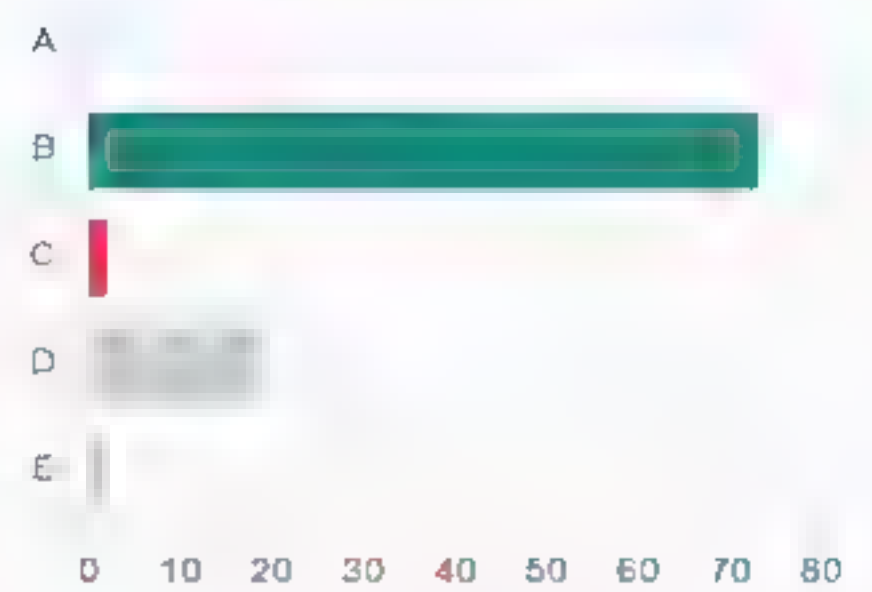
Explanation

**Delirium**

Delirium is an acute, fluctuating change in mental status, often characterised by confusion, disorientation, and agitation. The sudden onset over two days is typical of delirium, as is the patient's behaviour of searching through the nurses' bags, which suggests disorganised thinking and potential hallucinations or delusions.

**Delirium**

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

A 53-year-old woman presents to the Emergency Department with nausea, vomiting, diarrhoea then dry mouth, progressive muscle weakness, double vision and difficulty swallowing. She reports that her symptoms started 24 hours after attending a home-canned food party. On examination, she has ptosis, facial weakness and diminished deep tendon reflexes.

What is the most likely diagnosis?

A Acute myasthenia gravis

☒ Botulism

☐

D Lambert-Eaton myasthenic syndrome

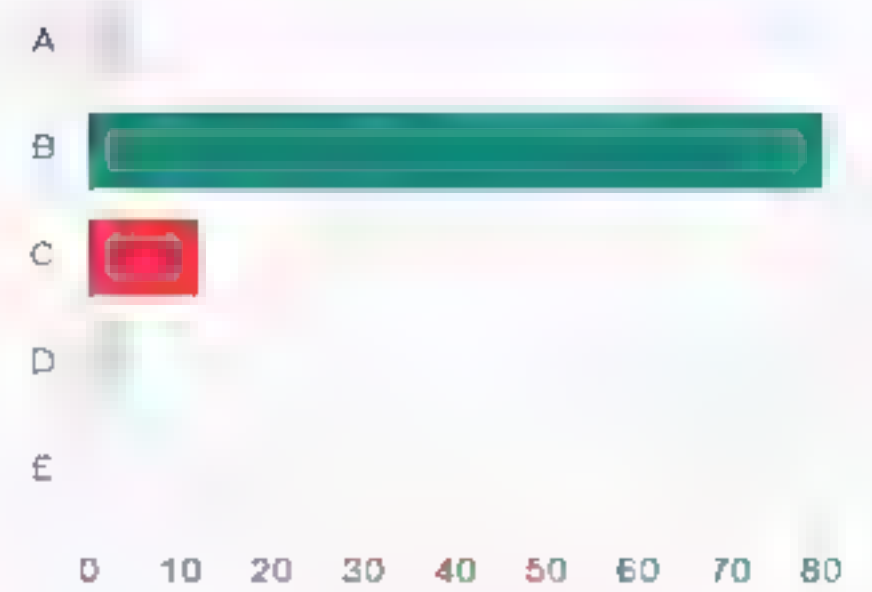
E Tick paralysis

Explanation

☒ Botulism

Botulism is caused by a neurotoxin produced by *Clostridium botulinum*, often associated with improperly canned or preserved foods. The onset of symptoms typically begins with GI issues, and then neurological issues such as muscle weakness, double vision, and difficulty swallowing following ingestion of the toxin are

Peer Responses %



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Create with AI Tutor



0 20 35/03 00 00

A 60-year-old woman presents to the Emergency Department with sudden onset visual disturbances affecting both eyes. She describes a **loss of vision in the temporal field of her left and right eye**. On examination, she has a bitemporal hemianopia.

What is the most likely site of the lesion?

Your ans.

A Left optic nerve

B Left optic tract

☒ C Optic chiasm

D Right optic nerve

E Right optic tract

Explanation

**Optic chiasm**

A lesion at the optic chiasm typically results in bitemporal hemianopia, which is characterised by a loss of vision in the temporal fields of both eyes. This occurs because the nasal fibres from each retina, which are responsible for the temporal visual fields cross at the chiasm. This pattern of visual field loss is most commonly associated with compression of the chiasm by a pituitary tumour or other midline structures.

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Chat with AI Tutor



0 20 35/03 00 00

A 53-year-old man presents to his General Practitioner complaining of excessive daytime sleepiness and his partner reports loud snoring and episodes of choking during the night. On examination, his BMI is 32 kg/m and he has a crowded oropharynx

Which is the most appropriate diagnostic test to perform?

Your ans.

- A Multiple sleep latency study
- B Nocturnal oxygen saturation monitoring
- C Polysomnography
- D Sleep nasoendoscopy
- E Sleep questionnaire

Explanation

C Polysomnography

Polysomnography is the gold standard for diagnosing obstructive sleep apnoea (OSA), which is suggested by the patient's excessive daytime sleepiness, loud snoring, and choking episodes during the night. This comprehensive overnight study monitors various physiological parameters including airflow, respiratory effort oxygen saturation, EEG and electromyogram, which allows for accurate diagnosis and severity assessment and



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Chat with AI Tutor



0 20 35/03 00 00

A 55-year-old woman presents to the General Practitioner with complaints of numbness in her hands two weeks after completing a course of chemotherapy that included vincristine and doxorubicin. She reports that the numbness is bilateral and primarily affects her fingertips.

What is the most likely cause of her symptoms?

☐ A Spinal cord compression

A Spinal cord compression

B B12 deficiency

☐ C Peripheral neuropathy

Peripheral neuropathy

E Raynaud's phenomenon

Explanation

☐ D Peripheral neuropathy

Peripheral neuropathy is a well-known side effect of certain chemotherapeutic agents including vincristine. Vincristine is a vinca alkaloid that interferes with microtubule formation by inhibiting tubulin polymerization. This is crucial for nerve function and can lead to axonal neuropathy which can impact sensory, motor, and autonomic nerves. Patients typically present with sensory symptoms such as numbness, tingling, and pain,

Peer Responses %



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Chat with AI Tutor







0 20 35/03 00 00

A 47-year-old woman presents to the Emergency Department with sudden, painless loss of vision in her left eye. On examination, she has a swollen optic disc and retinal haemorrhages.

What is the most likely diagnosis?

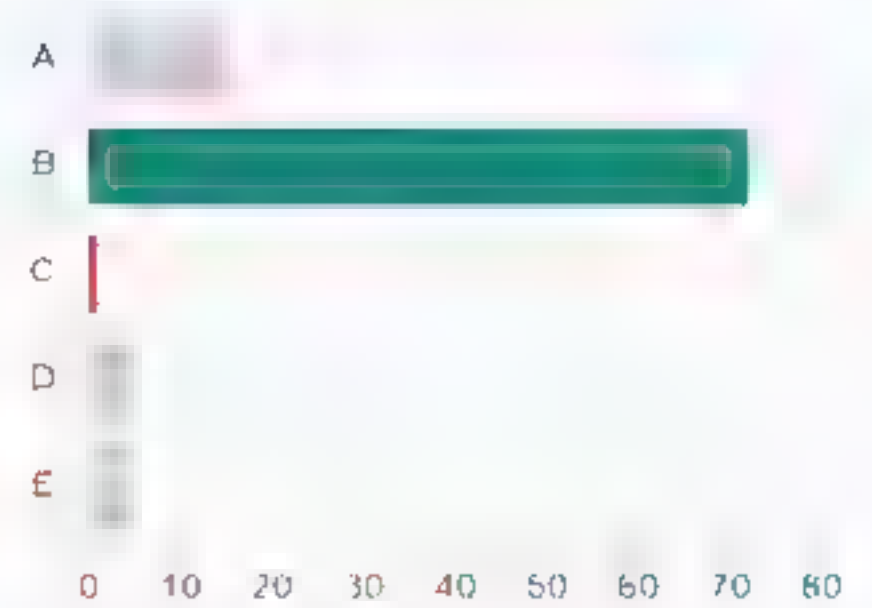
- ☐ A Central retinal artery occlusion
- ☒ B Central retinal vein occlusion
- ☐ C Branch retinal vein occlusion
- ☐ D Hypertensive retinopathy
- ☐ E Optic neuritis

Explanation

☒ Central retinal vein occlusion

Central retinal vein occlusion often presents with sudden, painless loss of vision. The classic findings include retinal haemorrhages, a swollen optic disc, and dilated, tortuous retinal veins, commonly described as a 'blood and thunder' appearance. The obstruction of venous outflow leads to increased intravascular pressure, causing these haemorrhages and oedema.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 72-year-old man presents to the General Practitioner with severe, uncontrolled pain despite being on regular paracetamol and codeine for his metastatic prostate cancer. He is visibly distressed and rates his pain as 9 out of 10 on a numeric pain scale.

What is the most appropriate next step in managing his pain according to the NICE guidelines?

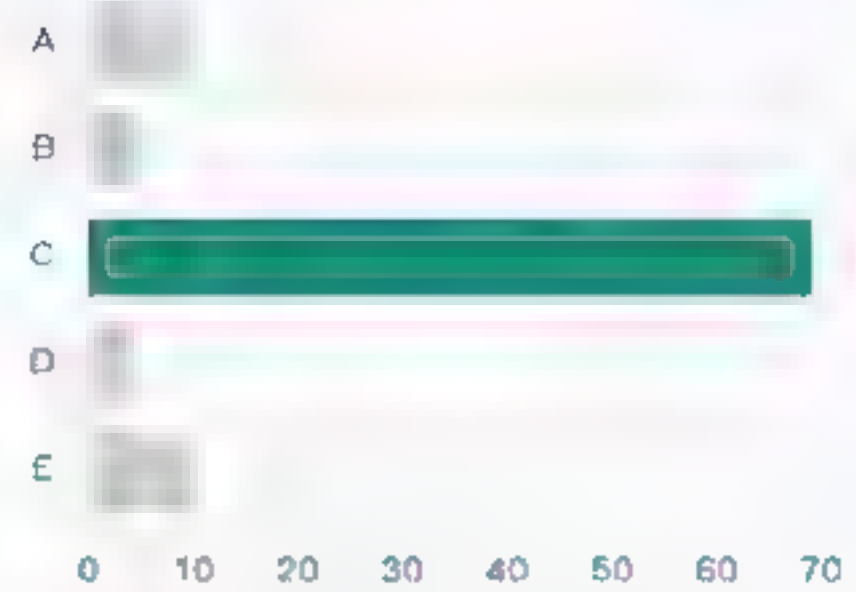
Your ans.

- A Add NSAID
- B Increase the dose of codeine
- C Start morphine
- D Start amitriptyline
- E Switch to tramadol

Explanation

According to the NICE guidelines, when pain is not controlled by weak opioids such as codeine, the next step is to initiate a strong opioid such as morphine. Morphine is effective for managing severe pain in cancer patients and can be titrated to achieve adequate pain control. The initiation of morphine allows for better pain management and improves the patient's quality of life. It is considered the most appropriate next step in the

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

An 18-year-old man presents to his General Practitioner with a history of inflammatory bowel disease (IBD) currently in remission. He reports significant anxiety around eating, fearing that food will exacerbate his symptoms. Despite reassurance that his IBD is under control, he remains severely distressed and has lost weight over the past few months.

What is the most likely diagnosis?

**A** Anorexia nervosa

**B** Avoidant/restrictive food intake disorder

**C** Bulimia nervosa

D Major depressive disorder

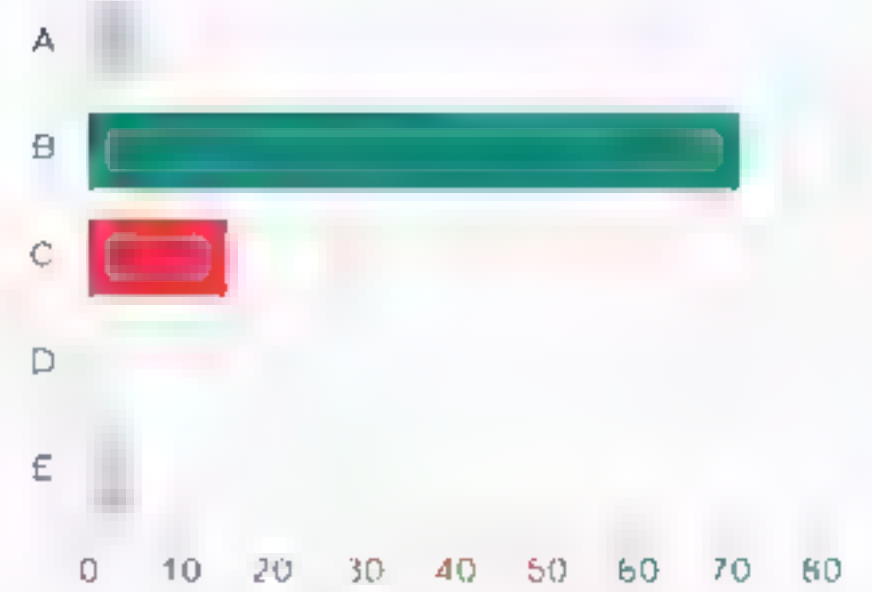
E Obsessive-compulsive disorder

Explanation

**B** Avoidant/restrictive food intake disorder

Avoidant/restrictive food intake disorder (ARFID) is characterised by an avoidance of food intake due to a fear of adverse consequences, such as GI distress, which aligns with this patient's concerns. Unlike anorexia nervosa ARFID does not involve a distorted body image or fear of gaining weight. Given that the patient's avoidance of

Peer Responses %



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Create with AI Tutor



0 20 35/03 00 00

A 35-year-old man presents to the Emergency Department with a painful rash at an injection site on his forearm, associated with trismus and back hyperextension. He is an IV drug user (IVDU)

What is the most likely causative organism?

*Clostridium botulinum*

*Clostridium tetani*

*Streptococcus pyogenes*

*Streptococcus pyogenes*

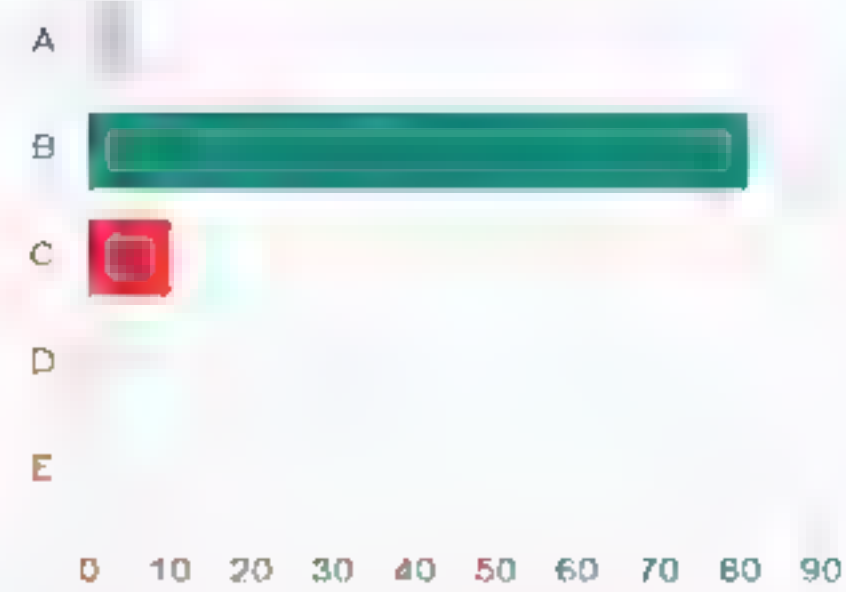
*Vibrio vulnificus*

Explanation

*Clostridium tetani*

*C. tetani* is the bacterium responsible for causing tetanus, which manifests with muscle rigidity and spasms such as trismus (lockjaw) and opisthotonos (back hyperextension). The spores of *C. tetani* are commonly found in soil and can enter the body through puncture wounds or injection sites, especially in IVDU. Once inside the body, these spores produce a potent neurotoxin called tetanospasmin that interferes with neurotransmitter release at inhibitory synapses, leading to unopposed muscle contraction and severe spasms. Given this

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Chat with AI Tutor







0 20 35/03 00 00

A 24-year-old woman is referred to the Cardiology Clinic with a history of reduced exercise tolerance and dyspnoea. She has no significant past medical history but mentions that she was told she had a congenital heart condition as a child. On examination, there is jugular venous distension, and a holosystolic murmur is heard best at the lower left sternal border.

What is the most likely cause of her symptoms?

**Correct Answer: Ebstein anomaly**

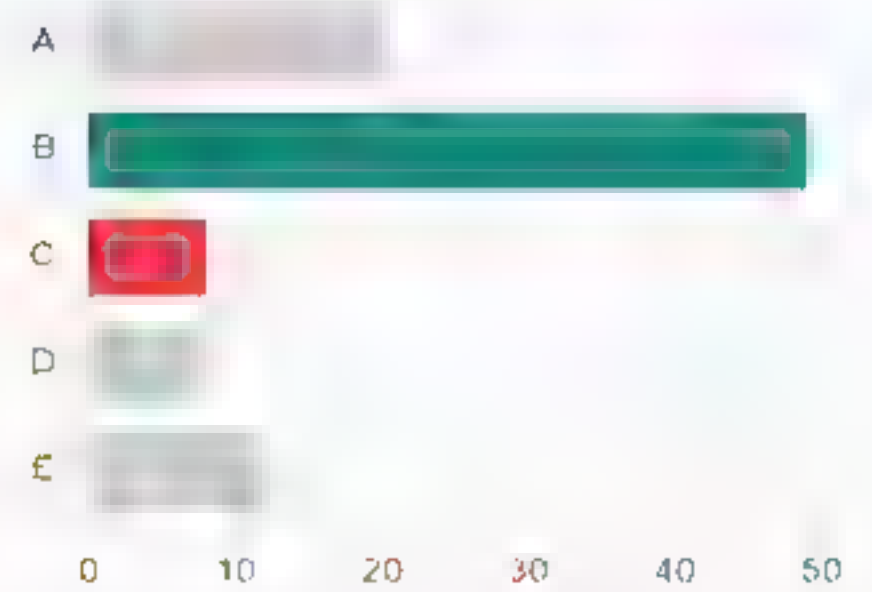
- A Atrial septal defect
- B Ebstein anomaly**
- C Mitral regurgitation
- D Mitral valve prolapse
- E Tetralogy of Fallot

Explanation

**Correct Answer: Ebstein anomaly**

Ebstein anomaly is a congenital heart defect characterised by the apical displacement of the tricuspid valve leaflets into the right ventricle, which leads to atresia of part of the right ventricle. This malformation results in significant tricuspid regurgitation and can cause right atrial enlargement, leading to symptoms such as

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Create with AI Tutor



0 20 35/03 00 00

A 45-year-old woman presents to her General Practitioner with a strong family history of breast and ovarian cancer

Which of the following genetic mutations is most likely to be associated with her family history?

☐ APC

A APC

☒ BRCA1

☐ KRAS

D KRAS

E TP53

Explanation

☒ BRCA1

The BRCA1 gene is one of the most well-known genes associated with hereditary breast and ovarian cancer. Mutations in BRCA1 significantly increase the risk of developing breast and ovarian cancers, often at a younger age. Individuals with BRCA1 mutations may also have an increased risk of other cancers, such as prostate cancer. Given the patient's strong family history of breast and ovarian cancer, a BRCA1 mutation is the most likely genetic mutation associated with her family history.



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Chat with AI Tutor



0 20 35/03 00 00

A 48-year-old man presents to the General Practitioner with complaints of excessive sweating, increased hand and foot size, and coarsened facial features over the past few years. On examination, his hands are broad with thickened skin and there is notable frontal bossing.

Which investigation is most useful to confirm the diagnosis?

Your ans.

- A Abdominal ultrasound
- B Fasting blood glucose
- C Growth hormone suppression test
- D Serum calcium level
- E Thyroid function tests

Explanation

The growth hormone suppression test is a reliable diagnostic tool for acromegaly. In acromegaly there is an excess production of growth hormone (GH), often due to a pituitary adenoma. This leads to increased levels of insulin like growth factor 1 (IGF-1) causing characteristic symptoms such as enlarged hands and feet, coarsening facial features and sweat gland hypertrophy resulting in excessive sweating. Increased IGF-1 level

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Chat with AI Tutor



0 20 35/03 00 00

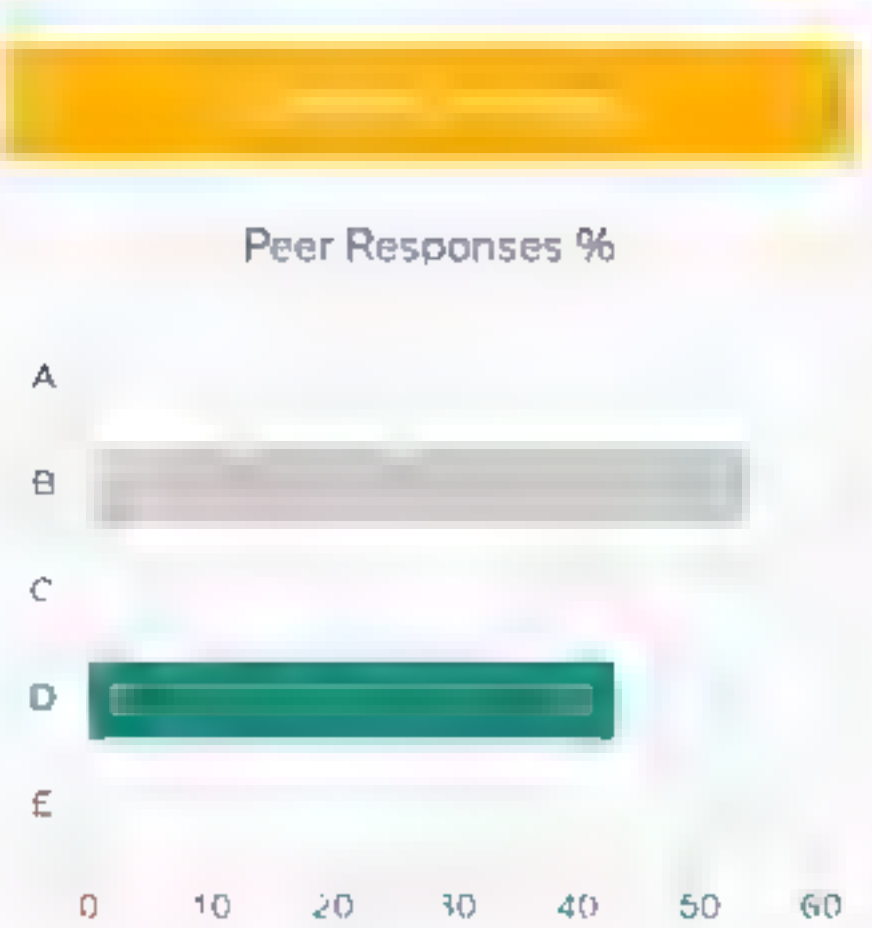
A 52-year-old woman presents to her General Practitioner with a six-month history of fatigue and pruritus. Laboratory tests reveal elevated alkaline phosphatase and positive antimitochondrial antibodies. Imaging studies do not show biliary obstruction.

What is the most appropriate initial treatment to control her itching?

- ☐ A R fampicin
- ☐ B Ursodeoxycholic acid
- ☒ C Cholestyramine
- ☐ D ...
- ☐ E Hydroxyzine

Explanation

Cholestyramine is a bile acid sequestrant that binds bile acids in the intestines, reducing their reabsorption and promoting their excretion in the stool. This process decreases enterohepatic circulation of bile acids, which can help alleviate pruritus in patients with primary biliary cholangitis (PBC). It is often considered as first line therapy for pruritus associated with PBC due to its efficacy and safety profile. Additionally, it can be combined



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Chat with AI Tutor



0 20 35/03 00 00

A 35-year-old man presents to the General Practitioner with a history of recurrent episodes of **visible haematuria**, typically following upper respiratory tract infections. He also reports mild flank pain and recent onset of hypertension. Urinalysis reveals **red blood cell casts and mild proteinuria**.

What is the most appropriate definitive investigation to confirm the diagnosis?

Your ans.

- A Abdominal ultrasound
- B Anti-neutrophil cytoplasmic antibody testing
- C Renal biopsy
- D Serum complement levels
- E Urine culture

Explanation

**C Renal biopsy**

A renal biopsy is the most appropriate investigation to confirm the diagnosis of immunoglobulin A (IgA) nephropathy. This condition is characterised by the deposition of IgA in the glomerular mesangium, which can only be definitively identified through histological examination of kidney tissue. The biopsy will provide detailed information on the extent of glomerular involvement and the presence of IgA deposits, which are

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 62-year-old man presents to the General Practitioner with worsening dyspnoea on exertion three months after undergoing a right pneumonectomy for non-small cell lung cancer. His vital signs are stable and there are no signs of infection or heart failure. Pulmonary function tests are performed to assess his current lung function.

Which of the following findings is most likely to be observed on his tests?

**C Decreased total lung capacity**

- A Normal spirometry results
- B Decreased forced expiratory volume in one second/forced vital capacity ratio

**C Decreased total lung capacity**

- D Increased diffusing capacity of the lungs for carbon monoxide
- E Increased peak expiratory flow rate

Explanation

**C Decreased total lung capacity**

After a pneumonectomy, the total lung capacity (TLC) is significantly reduced because an entire lung has been removed. This reduction is expected due to the loss of lung volume. Spirometry would show decreased volumes and capacities, including TLC, reflecting the surgical removal of the lung. The patient's symptoms of

Peer Responses %



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0 20 35/03 00 00

A 47-year-old man presents to the Emergency Department with a three-day history of a painful, swollen, and fluctuant right knee. He also reports a recent episode of fever and chills. He has no significant past medical history.

What is the most appropriate next step in management?

- ☐ A Arthrocentesis
- ☒ B IV antibiotics
- ☐ C Oral antibiotics
- ☐ D Referral to rheumatology
- ☐ E X-ray of the knee

Explanation

Arthrocentesis is the most appropriate next step in management in this case. This procedure allows for the aspiration of synovial fluid, which can then be analysed for cell count, crystal examination, Gram stain, and culture. This is crucial in confirming the diagnosis of septic arthritis and guiding appropriate antibiotic therapy. In the context of an acutely swollen and painful knee with systemic symptoms such as fever and chills,

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

A 45-year-old man presents to the General Practitioner (GP) with concerns about his risk of developing cardiovascular disease, given his family history and current lifestyle. The GP reviews several studies to determine the most reliable relative risk for cardiovascular disease in individuals with similar risk factors.

Which of the following studies are the most reliable and representative?

**C** A prospective cohort study with 3000 participants and a confidence interval of 1.2-1.6

- A A cohort study with 2000 participants and a confidence interval of 0.5-1.8
- B A meta-analysis of 10 randomised controlled trials with a confidence interval of 0.7-1.5

**D** A retrospective cohort study with 500 participants and a confidence interval of 0.6-1.9

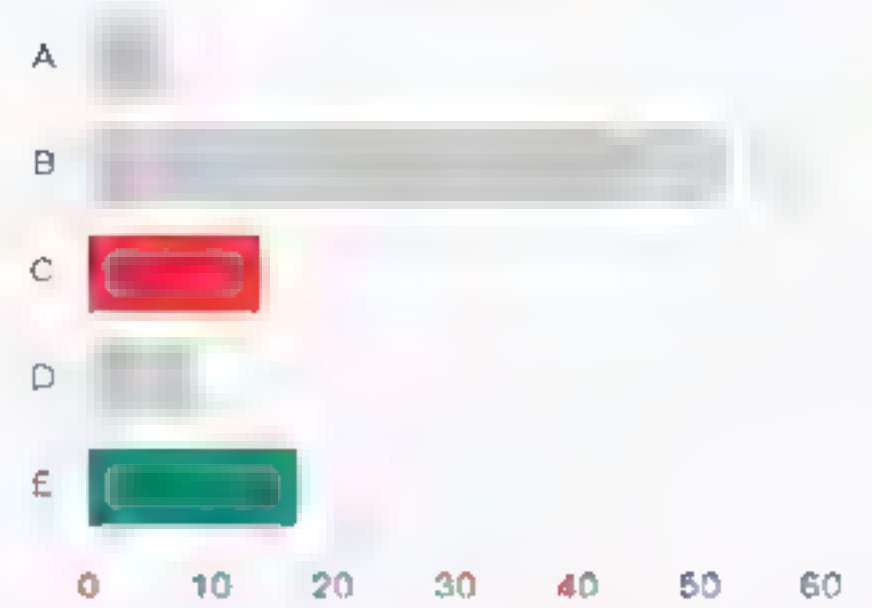
**E** A case-control study with 1000 participants and a confidence interval of 0.8-1.4

Explanation

**C** A prospective cohort study with 3000 participants and a confidence interval of 1.2-1.6

This study provides the most reliable and representative relative risk because it is a large prospective cohort study with 3000 participants, which enhances the power and generalisability of the findings. Importantly, the confidence interval of 1.2-1.6 does not cross 1, indicating a statistically significant association between the risk factors and cardiovascular disease. This suggests a consistent and dependable estimate of the relative risk.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 32-year-old man is brought to the Emergency Department by his family, who report that he has been acting unusually for the past week. They describe episodes of excessive talking, decreased need for sleep, and grandiose ideas about starting multiple businesses. On examination, he appears euphoric, distractible, and his speech is pressured

What is the most appropriate diagnosis?

**A** Acute stress disorder

**B** Manic episode

**C** Bipolar disorder

D Major depressive disorder

E Schizophrenia

Explanation

**B** Manic episode

The patient's presentation of elevated mood, excessive talking, decreased need for sleep, grandiosity, and distractibility are classic symptoms of a manic episode. Manic episodes are a key feature of bipolar disorder, where the patient experiences periods of abnormally elevated or irritable mood, increased activity or energy

Peer Responses %



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Chat with AI Tutor



A 49-year-old woman presents to the Emergency Department with fatigue, muscle weakness and recurrent kidney stones. Investigations

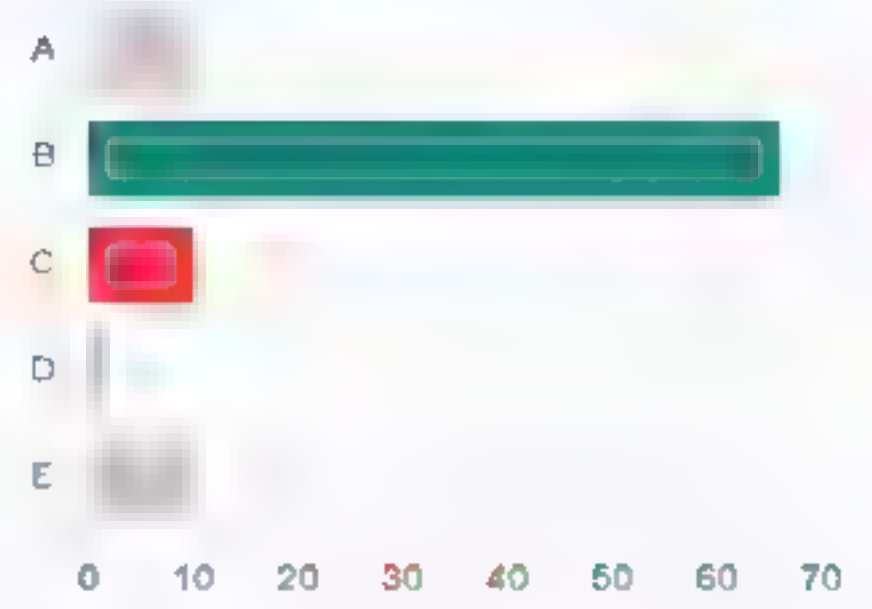
Investigation	Result	Normal value
Haemoglobin (Hb)	140 g/l	120-160 g/l
White cell count (WCC)	$6.5 \times 10^9/l$	$4-11 \times 10^9/l$
Sodium ( $Na^+$ )	140 mmol/l	135-145 mmol/l
Potassium ( $K^+$ )	3.0 mmol/l	3.5-5.0 mmol/l
Chloride ( $Cl^-$ )	108 mmol/l	98-106 mmol/l
Bicarbonate ( $HCO_3^-$ )	18 mmol/l	22-28 mmol/l

Which of the following is the most likely diagnosis?

- ☒ **A** Bartter syndrome
- ☐ B Primary hyperparathyroidism
- ☐ C Renal tubular acidosis (Type 1)
- ☐ D Primary hyperaldosteronism
- ☐ E Renal tubular acidosis (Type 4)



Peer Responses %



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Create with AI Tutor



0:20:35/03:00:00

A 28-year-old woman presents to the Emergency Department with a three-day history of increasing dyspnoea, productive cough with green sputum, and fever. She has a known history of cystic fibrosis and has been admitted multiple times in the past for respiratory exacerbations. On examination, she has a temperature of 38.5°C, a respiratory rate of 24 breaths per minute, and coarse crackles are heard bilaterally on auscultation.

What is the most likely cause of her current symptoms?

- A Acute respiratory distress syndrome
- B Allergic bronchopulmonary aspergillosis
- C Bacterial pneumonia
- D Pneumothorax
- E Viral pneumonia

Explanation

Bacterial pneumonia

Bacterial pneumonia with a pathogen such as *Pseudomonas aeruginosa* infection is the correct answer, as it is a common pathogen in patients with cystic fibrosis and is associated with recurrent respiratory exacerbations. The presence of green sputum, fever, and worsening dyspnoea are classic signs of a *Pseudomonas* infection.

Peer Responses %



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Create with AI Tutor



0 20 35/03 00 00

A 42-year-old woman presents to her General Practitioner with joint pain and swelling in her fingers and toes as well as patches of red, scaly skin on her elbows and knees. She mentions that her father also had similar skin lesions. On examination, there are notable sausage-shaped fingers and nail changes.

Which of the following is the most likely diagnosis?

Your ans.

- A Ankylosing spondylitis
- B Osteoarthritis
- D Rheumatoid arthritis
- E Systemic lupus erythematosus

Explanation

Psoriatic arthritis

Psoriatic arthritis is a seronegative spondyloarthropathy associated with psoriasis. It commonly presents with joint pain and swelling, dactylitis (sausage digits), and onycholysis (detachment of the nail from the nail bed), which indicate nail involvement. The presence of characteristic psoriatic skin lesions, alongside a family history of psoriasis, strongly supports this diagnosis. Psoriatic arthritis can affect any joint but is particularly noted for



Peer Responses %



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Chat with AI Tutor



A 64-year-old man presents to his General Practitioner with a two-week history of diarrhoea, abdominal pain and bloating. He was recently diagnosed with type II diabetes mellitus and started a new drug. On examination, his abdomen is mildly tender without any signs of peritonitis.

**What is the most likely cause of his symptoms?**

**A** Acute pancreatitis

B Diabetic gastroparesis

Metformin-Induced

E Small bowel obstruction

### Explanation

#### D Metformin-induced GI side effects

Metformin is commonly associated with GI side effects such as diarrhoea, abdominal pain and bloating particularly when the medication is first started or the dose is increased. These symptoms occur due to metformin's effect on glucose metabolism in the intestines and altered gut motility. The patient's presentation aligns well with these known adverse effects of metformin. Addressing this issue may involve dosage

Peer Responses %

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0 20 35/03 00 00

A 75-year-old woman presents to her General Practitioner with progressive pain and stiffness in her hands particularly at the distal interphalangeal and proximal interphalangeal joints. On examination, she has bony swellings in these joints.

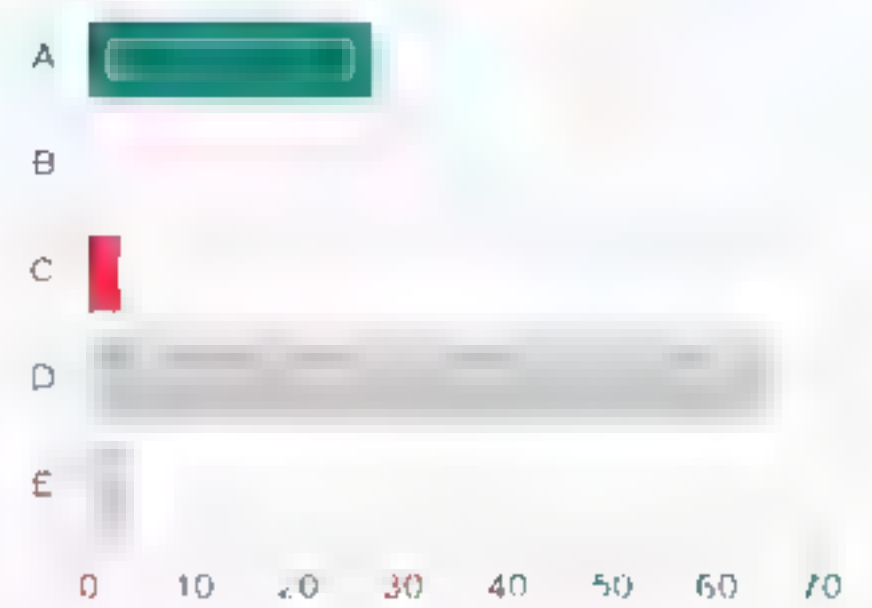
What is the most appropriate initial management for her condition?

- ☐ A Paracetamol
- ☐ B Surgical intervention
- ☐ C NSAIDs
- ☐ D NSAIDs
- ☐ E Occupational therapy referral

Explanation

Paracetamol is considered the first-line treatment for pain relief in osteoarthritis due to its safety profile, especially in elderly patients. It is effective for mild to moderate pain and has fewer gastrointestinal, cardiovascular and renal side effects compared to NSAIDs. For patients like this with primary symptoms of pain and stiffness in their hands, paracetamol provides a safer initial option.

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 30-year-old man presents to the Emergency Department with shortness of breath and fatigue. His arterial blood gas shows

pH	7.48	7.35-7.45
Partial pressure of carbon dioxide (PaCO <sub>2</sub> )	3.7 kPa	4.7-6.0 kPa
Bicarbonate (HCO <sub>3</sub> <sup>-</sup> )	22 mmol/L	23-30 mmol/L

What is the most likely cause affecting the haemoglobin-oxygen dissociation curve in this patient?

- 
- A Carbon monoxide poisoning
- B Decreased body temperature
- C Increased levels of 2,3-bisphosphoglycerate
- D Metabolic acidosis
- E Respiratory alkalosis

Explanation

Peer Responses %



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Chat with AI Tutor



0 20 35/03 00 00

A 32-year-old woman presents to the Emergency Department with severe abdominal pain and persistent vomiting one day after ingesting a large quantity of iron tablets. She is visibly distressed and has a history of anaemia for which she was self-medicating. Her blood tests reveal a significantly elevated serum iron level.

What is the most appropriate next step in management for this patient?

Your ans.

- A Activated charcoal
- B Deferasirox
- C Deferoxamine
- D IV fluids
- E Whole bowel irrigation

Explanation

Deferoxamine is the most important management for acute iron toxicity, particularly when serum iron levels are significantly elevated. This chelating agent binds free iron and promotes its excretion in the urine, effectively reducing iron overload. In cases of severe toxicity, where symptoms like persistent vomiting and abdominal pain are present, deferoxamine can prevent further complications such as metabolic acidosis, shock,

Peer Responses %



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Chat with AI Tutor



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What is the most appropriate interpretation of the NNT in this context?

A 50 patients need to be treated for one year to prevent one stroke

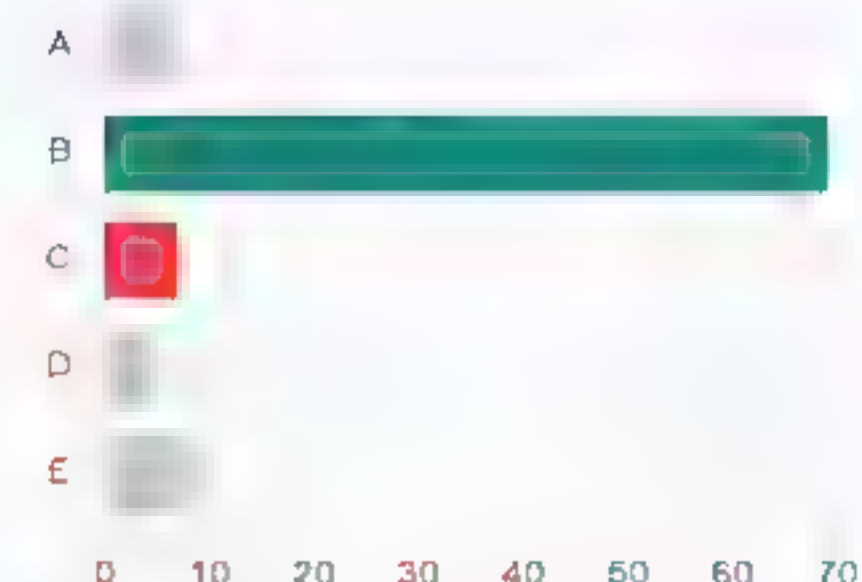
D 50 patients need to be treated to reduce the risk of stroke by 50%

E 50 patients need to be treated to see a 5% absolute risk reduction in stroke

### Explanation

The NNT of 50 indicates that 50 patients would need to be treated with the antihypertensive drug for five years to prevent one stroke. This interpretation aligns with the study's findings, providing a direct relationship between the treatment duration and the outcome. It highlights the effectiveness of the drug over the specified period, which is essential for clinical decision-making.

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

**What is the most likely diagnosis?**

A Adrenal incidentaloma

B Cushing's syndrome

## Pheochromocytoma

E Primary hyperaldosteronism

### Explanation

Pheochromocytoma is a rare catecholamine-secreting tumour arising from chromaffin cells of the adrenal medulla or extra-adrenal paraganglia. Due to the intermittent release of catecholamines like adrenaline and noradrenaline, this condition commonly presents with episodic symptoms such as headaches, sweating, and palpitations. The patient's markedly elevated BP (180/110 mmHg), episodic nature of classic symptoms, and

Peer Responses %

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[Chat with AI Tutor](#)



0:20:35/03:00:00

A 27-year-old woman presents to the Emergency Department with a three-day history of headache, fever, and neck stiffness. Examination reveals photophobia and a positive Brudzinski sign. A lumbar puncture is performed, and CSF analysis shows elevated white blood cell count, normal glucose levels, and mildly elevated protein levels.

What is the most likely diagnosis based on the CSF findings?

Your answer was incorrect

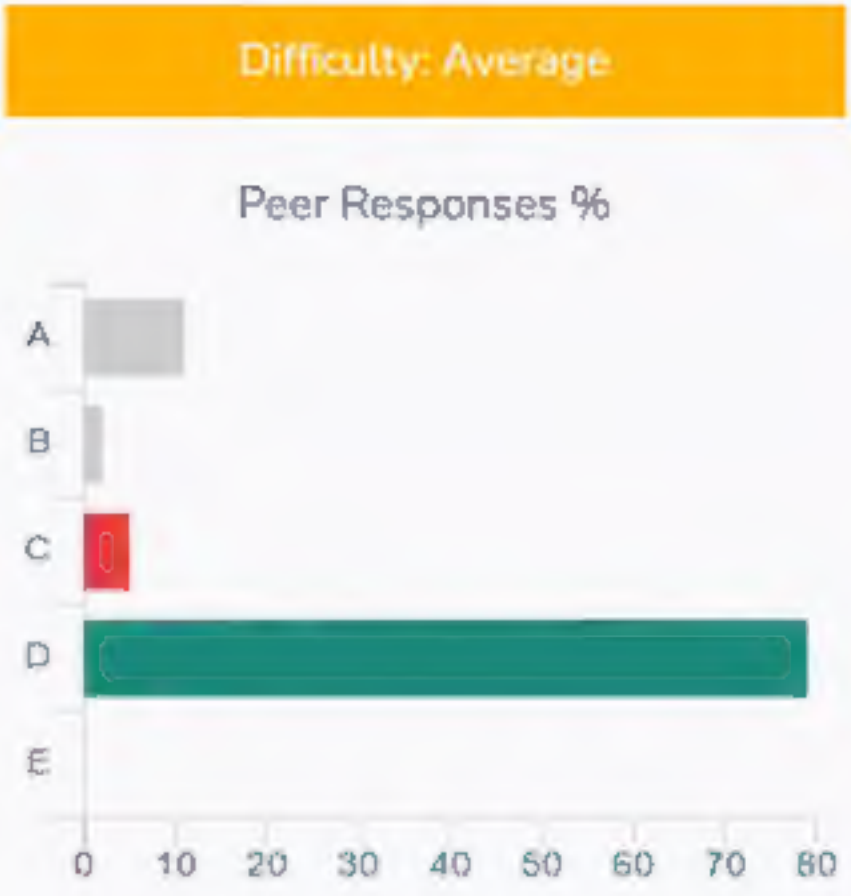
A	Bacterial meningitis
B	Fungal meningitis
C	Tuberculous meningitis
D	Viral meningitis
E	Parasitic meningitis

Explanation

D

Viral meningitis

Viral meningitis typically presents with a CSF profile that includes an elevated white blood cell count with a predominance of lymphocytes, normal glucose levels, and mildly elevated protein levels. These CSF characteristics match the findings in the patient's lumbar puncture results. Additionally, the acute presentation



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Chat with AI Tutor



Pastest

Question 98 of 100

A 45-year-old man presents to the Emergency Department with headache, dizziness and nausea. He is working on car engines in a poorly ventilated garage. On examination, he is tachycardic and has a cherry-red discolouration of the skin.

What is the most likely diagnosis?

Your answer was incorrect

A

Acute myocardial infarction

B

Carbon monoxide poisoning

C

Heat stroke

D

Hypoglycaemia

E

Pneumonia

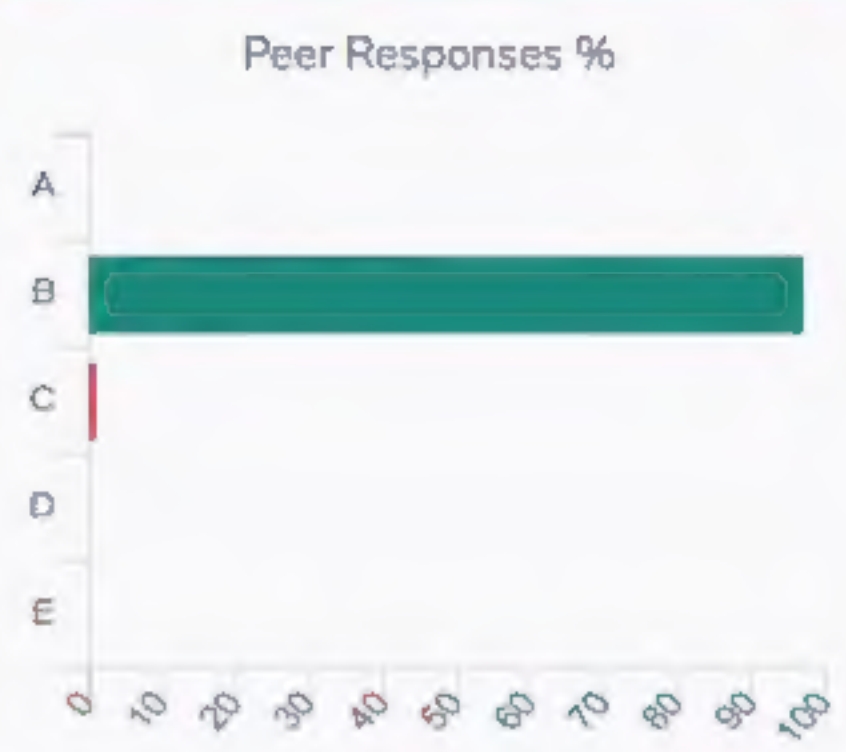
Explanation

B

Carbon monoxide poisoning

Carbon monoxide poisoning often presents with non-specific symptoms such as headache, dizziness, and nausea, which can progress to unconsciousness in severe cases. The cherry-red discolouration of the skin is a classic sign, although not always present. The patient's history of being in a poorly ventilated area with a running engine further supports this diagnosis. Immediate treatment with 100% oxygen is critical to displace

Difficulty: Average



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Chat with AI Tutor



0:20:35/03:00:00

A 42-year-old woman presents to the General Practitioner with progressive muscle weakness over the past three months, mainly affecting both her shoulders and hips. She also reports difficulty climbing stairs and lifting objects above her head. On examination, she has proximal muscle tenderness but no joint swelling. Blood tests reveal elevated creatine kinase levels.

What is the most likely diagnosis?

- Your answer was incorrect
- A

Dermatomyositis
- B

Inclusion body myositis
- C

Multiple sclerosis
- D

Myasthenia gravis
- E

Polymyositis

Explanation

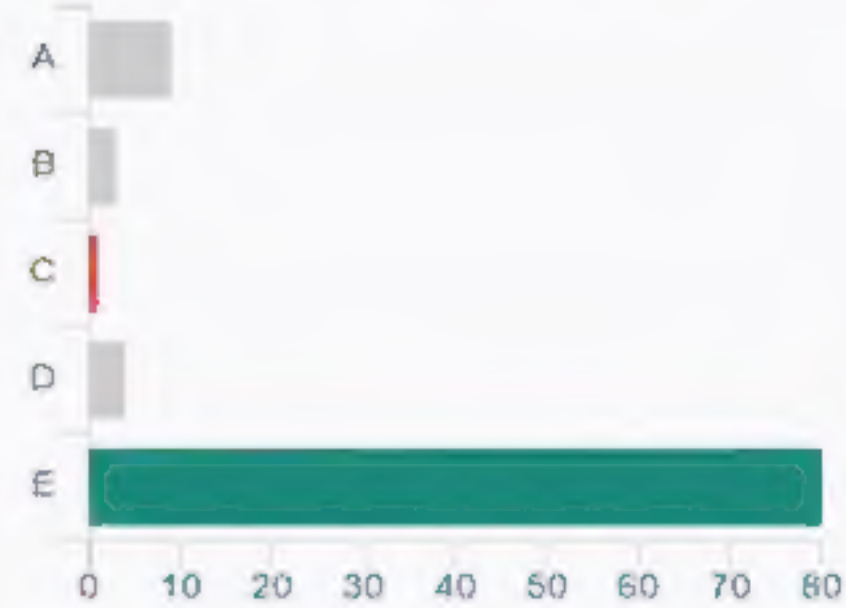
- E

Polymyositis

Polymyositis is an inflammatory myopathy that typically presents with symmetrical proximal muscle weakness, which aligns with the patient's symptoms. The elevated creatine kinase levels support muscle inflammation and damage, which is consistent with polymyositis. The absence of skin manifestations helps

Difficulty: Average

Peer Responses %



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Chat with AI Tutor



0:20:35/03:00:00

A 32-year-old woman presents to her General Practitioner with a **six-month history of intense fear and avoidance of social situations**, particularly those involving unfamiliar people. She reports experiencing palpitations, sweating, and shaking in these situations, which leads her to avoid social gatherings and work presentations, significantly impacting her daily life. She denies any history of substance abuse or other psychiatric conditions.

What is the most appropriate diagnosis?

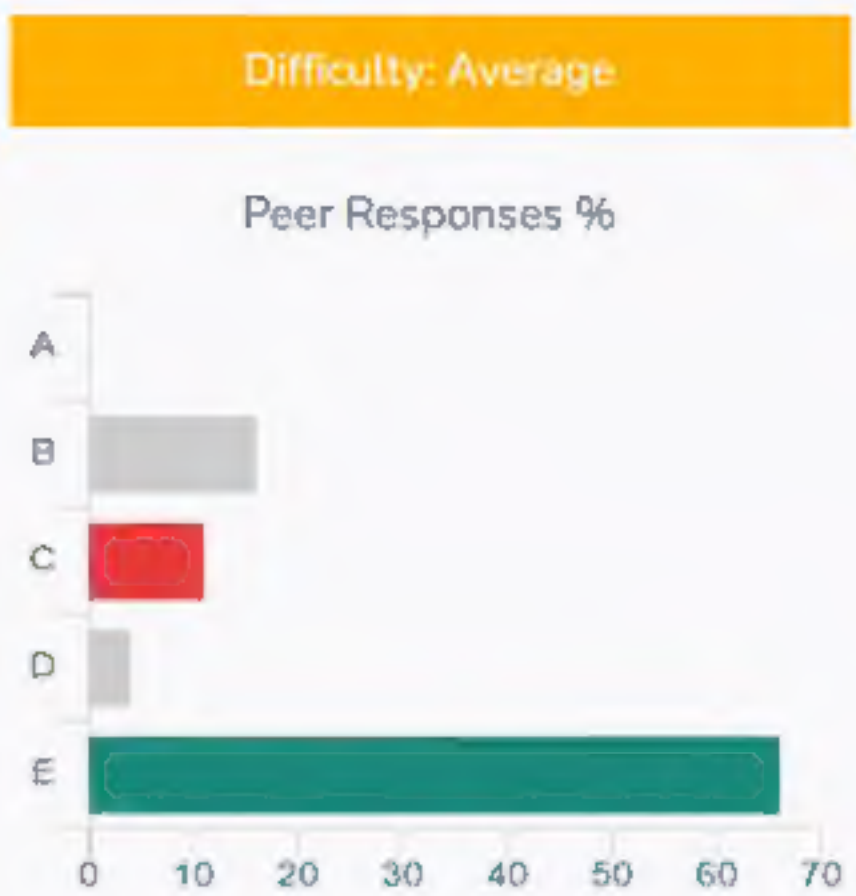
Your answer was incorrect

- A Acute stress disorder
- B Agoraphobia
- C Generalised anxiety disorder
- D Panic disorder
- E Social phobia

Explanation

E Social phobia

Social phobia, also known as social anxiety disorder, is characterised by a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or possible scrutiny



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Chat with AI Tutor